



-711M3

M 52n

1906

A





## REPORT

OF THE

BOARD OF METROPOLITAN PARK  
COMMISSIONERS.

JANUARY, 1907.



BOSTON:  
WRIGHT & POTTER PRINTING CO., STATE PRINTERS,  
18 POST OFFICE SQUARE.  
1907.

APPROVED BY  
THE STATE BOARD OF PUBLICATION.

711M3

M 59n

1906

A

## CONTENTS.

	PAGE
LIST OF OFFICERS, . . . . .	5
REPORT OF THE COMMISSIONERS, . . . . .	7
REPORT OF THE SECRETARY, . . . . .	17
REPORT OF THE LANDSCAPE ARCHITECTS, . . . . .	44
REPORT OF THE ENGINEER, . . . . .	48
FINANCIAL STATEMENT, . . . . .	76
APPENDIX: EXERCISES AT DEDICATION OF CHARLES ELIOT MEMORIAL BRIDGE ON GREAT BLUE HILL ON OCT. 13, 1906,	97



## OFFICERS.

---

### Commissioners.

WILLIAM B. DE LAS CASAS, *Chairman.*  
EDWIN B. HASKELL.            EDWIN U. CURTIS.  
DAVID N. SKILLINGS.        ELLERTON P. WHITNEY.

### Landscape Architects.

*Advisory.*  
OLMSTED BROTHERS.

### Engineer.

JOHN R. RABLIN.

### Law and Claims.

GEORGE LYMAN ROGERS.

### Secretary.

JOHN WOODBURY.

OFFICES, 14 Beacon Street, Boston, Mass.



# Commonwealth of Massachusetts.

---

## REPORT.

---

The Metropolitan Park Commission presents herewith its fourteenth annual report.

Several important additions have been made to the Metropolitan Park System during the past year, and most of the claims arising out of these acquirements have been already adjusted. The holdings at Lynn Shore have been increased by acquirement of the shore frontage between Red Rock and Nahant Street upon lines which permit the extension of the sea wall and driveway already completed and in use from the Soldiers' Monument in Swampscott to Red Rock. This acquirement was made possible by the earnest coöperation of the Lynn Board of Trade through a committee in securing options and prices within the limits of the funds which could be set aside for this work. Only two of the properties required for the improvement are now unpurchased, and it is hoped that a settlement will soon be reached in regard to these and that it will be possible to proceed with construction during the year 1907. A portion of the parkway from Middlesex Fells to Lynn Woods between the Fells and Green Street, just beyond Main Street, in Melrose, has been acquired with similar coöperation by the Melrose Board of Trade in securing prices and options, and by the city of Melrose in permitting for the parkway the use of its park lands along the northerly side of Ell Pond. The unsettled claims arising out of the acquirement are so unimportant that construction has already been commenced. This parkway will pass under the Western Division of the Boston & Maine Railroad at a point near the Melrose Station, and will cross

Main Street, sometimes known as the old Reading Turnpike, which is the only continuous road from Boston through the entire northerly half of the Metropolitan Parks District. Main Street also contains a line of electric cars from Boston, which, at Reading, makes connection with many other lines of electric cars. The completion of this parkway will add greatly to the accessibility of Middlesex Fells. The proposed transfer by the United States government of the Charles River frontage of the Watertown Arsenal has been made, and public ownership of the entire frontage of the northerly side of the river from Craigie Bridge and the new dam to Watertown is now assured. Construction of the driveway along the Arsenal frontage has been commenced. A short extension of Fellsway West in such form as to provide that electric cars may reach and pass through the Middlesex Fells without destroying the beauty and safety of Forest Street in Medford has been provided for. A small piece of land has been conveyed to the town of Hyde Park, to provide for a foot bridge and for the abolition of the grade crossing of steam railroads at Fairmount Station in the center of the town. Another piece of land has been conveyed to the town of Watertown, to provide for the re-location of Galen Street and for the extension of Mount Auburn Street as approaches to a new bridge, to replace, upon slightly altered lines, the old Galen Street Bridge across Charles River to Newton. A contribution of \$10,000 toward the cost of the new bridge and roads has also been promised, upon an agreement that the width of this new bridge shall be sufficient to accommodate both park and highway travel. Land has been conveyed to the town of Weston, to facilitate the building of a bridge at East Newton Street. Small pieces of land have been conveyed to the city of Waltham, to facilitate the improvement of its water works and for a sewer station.

The total area of the Metropolitan Park System, with these and other slight changes, is now 10,081.98 acres, of which 9,390.45 acres are classed as reservations and 691.53 acres as parkways. This total area includes 7,327 acres of woodland, 47.60 miles of river frontage, 10.26 miles of sea shore frontage and 27.41 miles of parkways. Further de-



CHARLES RIVER RESERVATION.—Bridge and Dam at Newton Upper Falls



tails of this holding are given in a table opposite page 18 of this report.

Land claims, aggregating \$191,272.82, chiefly for the acquisitions recently made, have been settled during the past year. Land claims yet unadjusted or unpaid are mostly for acquirements made during the past year, and with one exception are of small amounts. Their aggregate is provided for by present funds reserved to pay them.

The condition of the loans on Dec. 1, 1906, is briefly summarized as follows:—

Metropolitan Parks Loan:—

Appropriations and receipts, . . . . .	\$8,638,334 01
Expenditures, . . . . .	8,332,114 61

Balance in hands of State Treasurer, . . . . . \$306,219 40

Metropolitan Parks Loan, Series II.:—

Appropriations and receipts, . . . . .	\$4,814,907 41
Expenditures, . . . . .	4,503,095 77

Balance in hands of State Treasurer, . . . . . \$311,811 64

Nantasket Beach Loan:—

Appropriations and receipts, . . . . .	\$705,881 50
Expenditures, . . . . .	705,881 50

The construction work of the year has been important. The extension of Revere Beach Driveway to the Northern Circle has been finished and opened to public use, thus completing the development of the Revere Beach Reservation, excepting as to minor details and such changes as the constantly increasing use of the reservation may require in years to come. Continuation of this driveway by the roadway from the Northern Circle to Saugus River and by a bridge across the river to a connection with the State highway has also been completed. The State highway from Saugus River Bridge to Commercial Street in the city of Lynn was also completed about the same time, and both roads were open to public use on July 7. These roadways have been built of a width which seems sufficient for present uses, and upon lines which will permit the widening to the full width for which land has been acquired as necessity may require. The city of Lynn is building an extension from the State highway to

connect with Broad Street at Market Street, and has also made preliminary acquirements for an extension of Market Street as a wide harbor front street to Nahant Road near the new bath-house. The entire Commonwealth gains by the completion of these roadways in the connection thus made by ample roadway and park drive, not alone with Lynn, but also with all the north shore beyond. They have a far larger usefulness than that of being mere pleasure drives.

At Quincy Shore subgrading has been completed for a driveway from Moswetusset Hummock at the northerly end to the Hummock in front of the National Sailors' Home, a distance of 1.57 miles. It is expected that this driveway and the parkway from the bridge near the Atlantic Station of the steam railroad will be completed during the coming year. This driveway also is built to only a portion of the width which it is believed will be ultimately required, but upon lines which will permit widening without waste or unusual expense. At the southerly end it joins land acquired for a connection with the Furnace Brook Parkway. The lines of this acquirement, although determined with the concurrence of the authorities of the city, have been found in subsequent conference with them to be such as may be amended to give greater attractiveness and usefulness. The local authorities have expressed a preference for such amendment in the lines of taking, and, although it will necessitate postponement of construction, the newer and better lines are likely to be adopted.

A portion of Furnace Brook Parkway between Adams Street, Quincy, and the easterly end of the Blue Hills Reservation, has been completed, and, together with the new woods road which has been opened to a connection with the older roads in the reservation, provides a dignified and greatly improved approach. The new bridge, dam and culvert, completed this year, at Boylston Street, Newton Upper Falls, Charles River Reservation, have restored the full beauty of Hemlock Gorge, and replaced in permanent and more convenient form old structures which had become dangerous.

Important work of construction along Mystic River has been continued during the year. Subgrading of the driveway from High Street at the southerly end of Mystic Valley

Parkway to Cradock Bridge in the center of Medford, and construction of a bridge at Auburn Street and of another near the Armory have been substantially completed. The plans for a dam at Cradock Bridge, prepared under authority of a special act of the Legislature, have been approved by the Secretary of War for the United States, and by the Board of Harbor and Land Commissioners of this Commonwealth, and, in general terms, by special report of the State Board of Health of the Commonwealth upon the subject matter of an improvement of Alewife Brook and other tributaries of Mystic River. The detail plans of the dam and roadway are now before the State Board of Health in a form intended to conform to the suggestions of their special report. The plans and the approval given by the United States government require the addition of a third arch to Cradock Bridge, and immediate legislation is asked to authorize this work. The bridges already built are unique. The Armory Bridge was built within a coffer-dam in the river, and the channel then shaped so as to confine the river to a new channel under the new bridge. The Auburn Street Bridge was built in the marsh, removed from the old channel of the river, upon lines providing for its use by Auburn Street of the city of Medford and by the river driveway, and to span the newly built and straightened channel for the river. The latter bridge thus provides for an improved river channel, and, without additional cost to the Commonwealth, furnishes the city of Medford with bridge accommodations at a cost less than that of the new bridge which it would soon have to provide to replace the old and worn-out Auburn Street Bridge. This work has been carried on with due regard to the prospect of the improvement of Alewife Brook, which, in view of the special report upon that matter by the State Board of Health, seemed likely to be soon entered upon. During the past session of the Legislature an act was in fact passed, directing this Board to carry out the proposed improvement of Alewife Brook under a special appropriation therefor of \$100,000, to be repaid by the cities of Cambridge and Somerville and the towns of Arlington and Belmont, provided they should accept the act within four months. Such

acceptance was made after conference with this Board, upon the understanding that this Board would prepare detail plans and estimates at the expense of the appropriation therefor, but, before entering upon further expense or actual work, would present the plans to the several cities and towns for their approval. This seemed a very proper provision, because the exact effect of the proposed plans, especially in regard to Spy Pond, and the full cost of all the work necessary to the completion and of the land necessary for control of the brook could not be ascertained without such details, and because it was apparent that the cost of the necessary land requirements was not included in the estimates made by the report of the State Board of Health and the resulting appropriation. It was recognized by the cities and towns in making this agreement that the detailed estimates might necessitate further legislation and appropriation for the purpose of carrying out the work. These facts, in regard to both Mystic River and Alewife Brook, warrant the recommendation that necessary additional legislation be provided by the Legislature to which this report is made.

At the date of the last report it was stated that no reply, except by informal inquiry and suggestions, had been received from the Boston Elevated Railway Company in comment upon the proposed terms of a grant of a railway location in Middlesex Fells Parkway and Reservation petitioned for by the company. After a time, as no reply had been received and no further amendment to the proposed grant suggested, a formal grant of location was made to that company; and a grant of another location in extension of the first grant was also made, July 18, 1906, to the Boston & Northern Street Railway Company. Both grants remained unaccepted at the expiration of the period legally allowed for their acceptance. The two companies afterwards requested conferences, and stated their reasons for not accepting the several grants. Conferences have been held, and the points of objection have, in general, proved to be ones which will not affect the safety and attractiveness of the parkway or reservation; and it is hard to understand why the points raised at these subsequent conferences could not have been presented



NANTASKET BEACH RESERVATION — General View.



for consideration before the grants above referred to were made. The Boston & Northern Street Railway Company has filed a new petition, but none has as yet been filed by the Boston Elevated Railway Company.

There has been a largely increased use of the reservations and parkways during the past year, due in large measure to the favorable weather conditions, and to the opening of new portions of the system and the improvement of older portions. The beaches and the bath-houses at Nahant, Revere and Nantasket showed an increased use, and in general the crowds were more than usually good-natured and orderly. The music, provided for the first time by the Commonwealth, was evidently much appreciated by the public, and served as a good agency in maintaining order. The appropriation for the music was insufficient to provide for a band at all the reservations, and, by the terms of the act under which it was made, could not be expended upon the parkways. The Board therefore decided that the greatest good would be accomplished by daily concerts at Revere and Nantasket, where the largest number of people would be gratified, by occasional concerts at Lynn Beach in front of the Nahant Bath-house, and by one concert on Charles River at the time of a river carnival.

The passage of the so-called eight-hour law and its immediate enforcement by the Board necessarily affected the amount of work which could be done, both under the maintenance appropriations and under the loans available for construction work. The increased cost of labor resulting from this act and the increased cost of materials which has come in the past few years will in some measure prevent the full accomplishment of work outlined in previous reports, and of necessity increase the estimates for all maintenance work, especially for such work as that against the gypsy and brown-tail moths. Another unexpected element of cost has been met with in the increased cost of repairs for the parkways and roads used by automobiles. The suction by the rubber tires of heavy, swift-moving machines, and the extraordinary power of the wheels of such machines to tear and rut the road surface, especially on curves and at street corners, have

generally increased the cost of keeping the road surface in reasonable condition. Deterioration began to show itself so rapidly on some portions of the parkways during the past year that the maintenance appropriation proved insufficient to prevent radical injury, and it was necessary to conduct experiments for preserving the road surface at the expense of the loans. The experiments which seem to have given most satisfactory results are those with hot tar upon macadam roads and with Texas oil upon newly surfaced gravel roads. There has not yet elapsed time enough to warrant a definite conclusion, but the degree of success has been sufficient to warrant a request that the Board be provided with funds in the annual appropriations to continue these experiments in connection with the repair of other portions of the parkways and roads which show most deterioration.

The destruction of the gypsy and brown-tail moths in the wooded reservations has been a most serious special item of expense for the year, and must continue to be such for the coming year at least. In the Blue Hills infestation was in the form of many scattered colonies, and, as indicated in the report for last year, was placed under the supervision of an agent designated for that purpose by the State Superintendent, Professor Kirkland. The State Superintendent reports that this year there is such serious infestation outside the reservation in such localities as the Quiney Granite Quarries as to cause serious alarm. It is to be hoped that ample provision will be made for work on these outside lands bordering the reservation, otherwise, a further infestation of the reservation will result that will be very destructive and expensive to control in subsequent years. Similar conditions exist in the neighborhood of the Stony Brook Reservation, where there is serious infestation in the outside bordering lands in Hyde Park. In most of the other reservations the repressive work seems to have been quite satisfactory, and, with a continuance of the work of the past year, no evil results are to be apprehended. In Middlesex Fells, as stated in the last report, infestation was so serious as to require the adoption of a plan for radical work throughout the entire reservation. The plan required a thorough thinning out of

unnecessary bushes and trees, in addition to the usual work of repression. This work has been skilfully done under expert supervision, in such a way as to improve the forest conditions while materially reducing the trees to be cared for. It is now practically completed. In addition, repressive measures were carried out as follows: Upon a strip from 200 to 500 feet wide around the borders of the reservation the trees and ground were minutely examined, and all nests destroyed by creosote. Equally thorough work was done along the borders of the public highways and the most-travelled woods roads. Tree work alone, with destruction of nests on the trees, was extended over almost all the rest of the reservation, but of necessity this work was much less thorough than that done along the borders. Unfortunately, it could not be done until the appropriation became available at the end of February, and so a considerable part of it had to be delegated to contractors, who were obliged to work rapidly and under adverse conditions in order to complete their work before the caterpillars were hatched. After creosoting, the trees over nearly all the reservation were banded with tanglefoot. The first shipment of tanglefoot was unsatisfactory, and there was considerable delay in obtaining a new supply by arranging with the manufacturers to rectify their mistake. When the caterpillars appeared, the trees were inspected very carefully, and all found below the bands were destroyed. This work, also, was less efficient than was hoped, because a temporary lack of funds delayed the employing of men just when unusual circumstances made their employment necessary. Unhindered by the hard rains usual in May, the caterpillars were able to spin and keep unbroken their silken webs, and so cross the tanglefoot bands faster than the limited number of men employed could destroy them. Some defoliation resulted, but this was checked by spraying before any serious damage was done. Valuable assistance in this work was rendered without cost to the District by Gen. Samuel C. Lawrence of Medford, in addition to the monumental work of repression done by him on his own and other outside lands and roadsides. The record of the year in this work may be briefly stated as follows: The

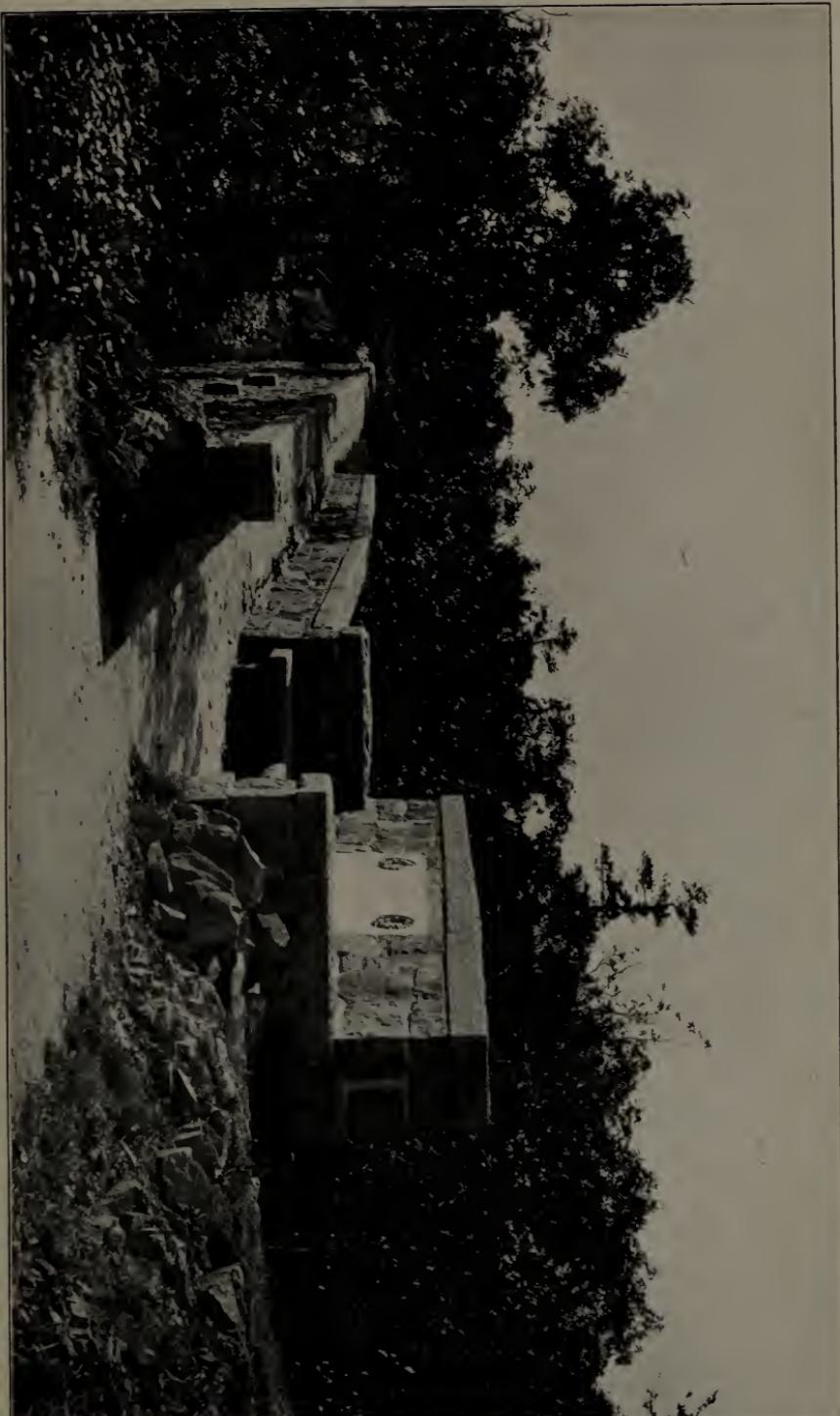
foundation work for complete repression was thoroughly done, no trees were destroyed, and there was only limited defoliation at any point. A considerable balance of the second appropriation was brought over, and it was therefore possible to renew the work in the autumn with such promptness and vigor that it has already advanced to a point which warrants the statement that it will be possible, with an appropriation equal to that of last year, to complete the work throughout the reservations with a thoroughness which has never before been possible, and which, judging from the effectiveness of the work last year, promises an easy control in subsequent years. The experience of the last year seems to prove conclusively the merits of the present method, which begins the work of destruction of the pests at the first possible moment in the autumn, and continues the work throughout the season. Only in this way can labor enough be secured to do the work with the necessary thoroughness in the larger wooded reservations.

It was with peculiar satisfaction that the Commission, on October 15, received, on behalf of the District and Commonwealth, the gift of a memorial bridge and tablet, built by his friends and admirers, to the memory of Charles Eliot, first landscape architect to the Board, at a point in the Great Blue Hill from which the view was an especial delight to him, and as part of the path encircling the hill top.

All of which is respectfully submitted,

WILLIAM B. DE LAS CASAS.  
EDWIN B. HASKELL.  
EDWIN U. CURTIS.  
DAVID N. SKILLINGS.  
ELLERTON P. WHITNEY.

DEC. 12, 1906.



BLUE HILLS RESERVATION — Charles Eliot Memorial Bridge.



## REPORT OF THE SECRETARY.

---

Hon. WILLIAM B. DE LAS CASAS, *Chairman, Metropolitan Park Commission.*

SIR:—I herewith present my report for the year ending Dec. 1, 1906. It is subdivided as follows: 1. Acquisition of lands. 2. Administration. 3. Miscellaneous. 4. Finance.

#### 1. ACQUIREMENT OF LANDS.

Land has been taken for the first section of Lynn Fells Parkway, which, when completed, will connect the Middlesex Fells with the Lynn Woods. The present taking is substantially all in Melrose, and extends from the northwesterly boundary of the Fells at the end of Hamilton Road to Green Street. In its course it skirts along Sewell Woods and passes through the northerly part of Ell Pond Park, both public holdings of the city of Melrose. The parkway will pass under the Western Division of the Boston & Maine Railroad at the end of Perkins Street. The length of this section which it is intended to construct at the present time is one mile.

A strip of land has been acquired along the easterly side of Forest Street in Medford, from the present end of Fellsway West to Elm Street, sufficient in width to permit the extension of the Parkway with its double roadway and central loam space for electric cars to a convenient entrance into the Middlesex Fells.

In Malden, at the northeast corner of Fellsway East and Pleasant Street, land has been purchased from abutting owners to protect the parkway from possible encroaching buildings, and give opportunity for effective planting along the edge of the eastern roadway as it approaches Fellsmere Park.

The taking near Eliot Circle in Revere for the first section

of Winthrop Parkway has been amended to meet certain requests of the town of Revere.

Near Paul's Bridge in Hyde Park an exchange has been made with the owner of land on both sides of Milton Street, by which the lines of Neponset River Parkway and Reservation are improved.

In West Quincy a small parcel of land was purchased to turn Revere Street into Ashland Street, and avoid an awkward entrance into Furnace Brook Parkway.

The remaining land necessary for extending Lynn Shore Drive from its present ending at Red Rock to Nahant Street, and thus to a physical connection with Nahant Beach Parkway, was taken in September last, after satisfactory options had been obtained from all but three of the owners. The result is to place the beaches and headlands from the Soldiers' Monument in Swampscott to Little Nahant, a distance of nearly three miles, in public control.

In Medford a small estate has been taken which was required for the approaches to the Auburn Street Bridge in Mystic River Reservation.

On Quincy Shore land has been purchased at the foot of Bromfield Street for headquarters buildings which will be required when this reservation is fully developed.

Conveyances have been made to the town of Hyde Park of land required in elimination of railroad grade crossings at Fairmount Avenue and Bridge Street, and for abutments to a foot bridge to the Glenwood Station on the Midland Division of the New York, New Haven & Hartford Railroad.

In accordance with an agreement reached between the town of Revere, the abutting owner and the Commission, the portion of Beaver Street between Ocean Avenue and the Revere Beach Reservation has been made a part of the reservation, and laid out as a promenade. Strips of land lying between the Revere Beach Driveway north of Revere Street and the original taking line have been sold to the abutting owners. Similar strips which remained undeveloped after the building of the Winthrop Shore Drive have been sold to the owners of the adjoining lots.

## Metropolitan Park System—Dec. 1, 1906.



In Watertown a right of way for the extension of Charles River Road through the grounds of the United States Arsenal has been granted by the United States, in accordance with the provisions of an act of Congress approved on April 28, 1904.

In Waltham a small parcel of land on Woerd Avenue was conveyed to the city of Waltham for a small sewer pumping station; and certain rights in land on the northerly bank near Stony Brook have been leased to the city for water purposes, on terms which will secure proper protection to the park purposes for which the land was acquired.

At Watertown Square land has been conveyed to the town of Watertown for the extension of Mount Auburn Street and changes in the lines of Galen Street, in connection with the building of a new bridge across the Charles River which will be of sufficient width to provide for both traffic and park travel.

A small strip of land in Weston has been conveyed to that town for changes in street made necessary in the rebuilding of the bridge across Charles River which connects Park Road, formerly East Newton Street, in Weston, and Concord Street in Newton.

## 2. ADMINISTRATION.

No change in the method of administration has been made. The general office and Engineering Department are still located at 14 Beacon Street, in Boston. In the general office the work of the employees has been more particularly classified, and the changes have proved to be advantageous.

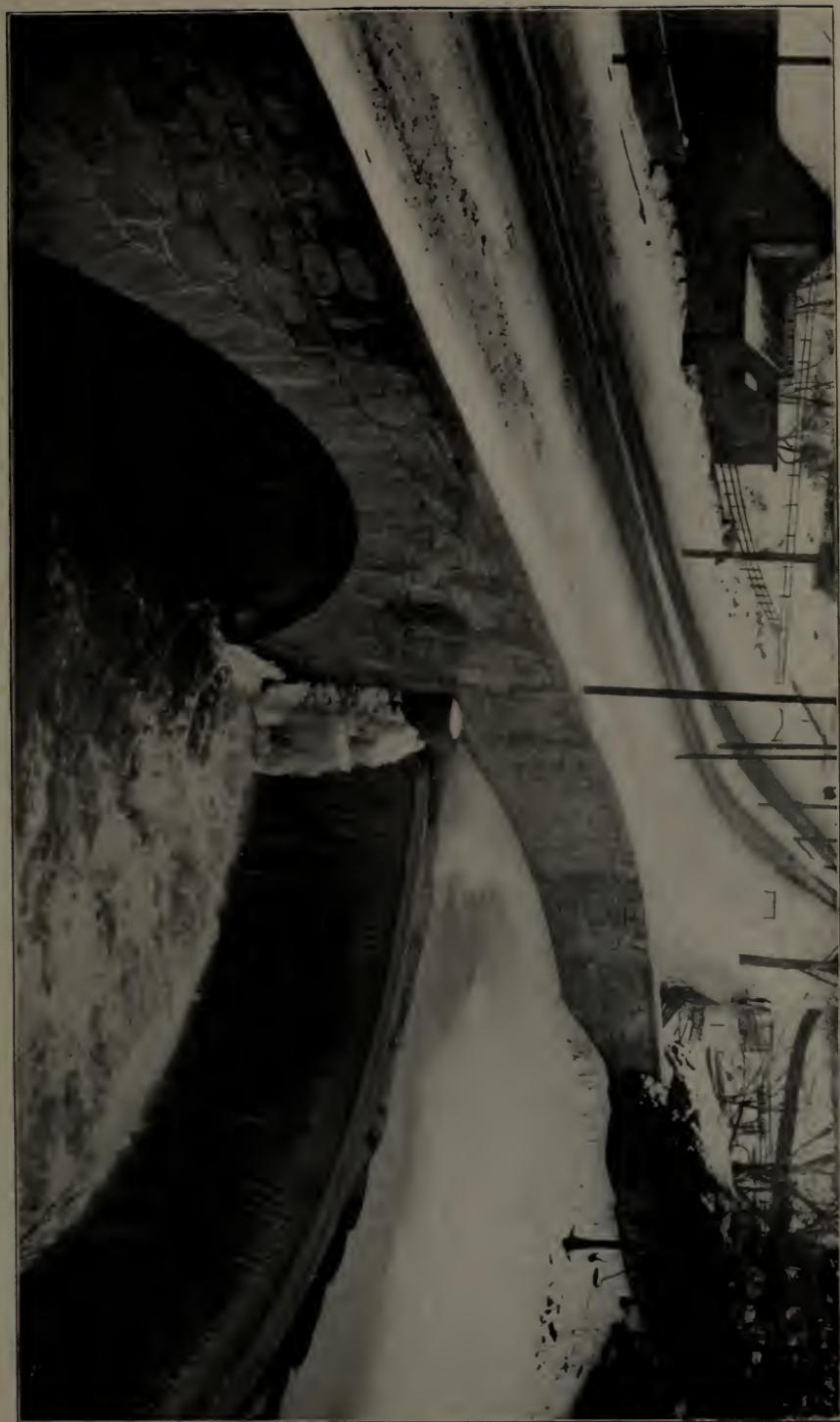
The following is a brief statement of the work accomplished in the various departments: —

### *Landscape Architects.*

The advice of the Landscape Architects, Messrs. Olmsted Brothers, has been obtained whenever occasion demanded; and their report, which is printed herewith, gives the details of the matters in which they have been called upon to render services.

*Engineering Department.*

Important construction work has been in the charge of this department. Work under contract for surfacing and finishing Furnace Brook Parkway from Adams Street in Quincy to Blue Hills Reservation is substantially finished, and the road will be open to travel some time in December. Arrangements have been made for lighting this stretch of one and a half miles with Welsbach lights, of the self-feeding pattern. The concrete and stone bridge carrying the West Quincy Branch of the New York, New Haven & Hartford Railroad over this parkway was finished and put to use early in the year. In Melrose work has already been begun on Lynn Fells Parkway. The abutments for the bridge to carry the Western Division of the Boston & Maine Railroad over the parkway at the foot of Perkins Street are completed, and the steel superstructure is about to be put in place. The contract for subgrading the parkway between Green Street and the Fells, a distance of one mile, is let and the work has begun. Lynnway, as the short piece of parkway behind the Point of Pines is called, was finished and opened to travel last July. Construction plans for the extension of Fellsway West in Medford from its present ending at Forest Street have been prepared, and construction may begin as soon as the matter of the proposed street railway locations in the Fells is settled. At Nahant Beach Parkway the traffic road in the rear of the bath-house has been paved with granite blocks. On Revere Beach Parkway nearly four miles of roadway have been treated with the Tarvia process, which seems to promise good success in preservation of the road from destruction by automobile traffic. The particulars of this treatment are given more fully in the Engineer's report. Construction plans have been prepared for building the first section of Winthrop Parkway near Eliot Circle in Revere, for which land was acquired last year. At Newton Upper Falls the improvements at Boylston Street which have been long under way have been completed, except a portion of street surfacing which is to be done by the city of Newton



CHARLES RIVER RESERVATION — Dam at Newton Upper Falls.



in the spring. This includes a three-arch stone and concrete bridge, two concrete dams and a large concrete culvert for carrying the East Branch of Charles River. In Watertown the construction of a portion of Charles River Road through the United States Arsenal grounds is going on. Construction plans are being prepared for building the roadway and sea walls in the remainder of Lynn Shore Reservation between Red Rock and Nahant Street. These plans will conform in general respects to the development already made along King's Beach in Swampscott and Lynn. Important work has been done in Medford on the Mystic River. Two concrete bridges of pleasing design have been built, one at Auburn Street and the other near the Armory. Dredging of the river and depositing of the material for roadways on the banks has continued. Plans for the proposed dam at Cradock Bridge have been made, and have been approved, so far as required by law, by the War Department of the United States and the Massachusetts Board of Harbor and Land Commissioners. They are now in the hands of the State Board of Health for approval as consistent with the purification of Mystic River and Alewife Brook. At Quincy Shore the driveway along the shore has been built to sub-grade from Squantum to the National Sailors' Home. This has involved also the building of a concrete bridge across Sachem Brook, and a concrete culvert at a creek near the Sailors' Home. A large part of the material for the road was taken from the bay, and in so doing the beach was cleaned and graded its whole length. At Revere Beach the driveway between Revere Street and the Point of Pines was completed and opened to public use in July. Some bulkhead work has also been done at several weak points on the beach.

The engineering department has also provided necessary inspection of bridges and supervision of permits, and has also furnished advice and supervision for any important works of construction which have been done by the forces of the Commission.

*Law and Claims Department.*

During the year land claims have been adjusted to the amount of \$191,272.82, of which \$103,939.63 was for land taken for reservations and \$87,333.19 was for land taken for parkways. Of these claims 12 were for reservation and 39 for parkway takings, and were further divided as follows:—

Reservations: Charles River, 1; Neponset River, 1; Mystic River, 1; Quincy Shore, 1; Lynn Shore, 8. Parkways: Revere Beach, 1; Middlesex Fells, 10; Furnace Brook, 6; Winthrop, 1; Neponset River, 2; Mystic Valley, 1; Lynn Fells, 18.

The Commission has continued its policy of not making takings by power of eminent domain until satisfactory options have been obtained from substantially all the owners of land to be included, and as a result few new claims have been created. There now remain to be adjusted 30 claims, of which 23 are for land taken for reservations and 17 for parkways. They are divided further as follows:—

Reservations: Charles River, 9; Neponset River, 7; Mystic River, 3; Quincy Shore, 1; Lynn Shore, 1. Parkways: Revere Beach, 2; Middlesex Fells, 9; Lynn Fells, 2; Winthrop, 4.

This department has also, under the supervision of the Attorney-General, continued to prepare contracts and agreements and to furnish general advice as to the details of the work of the Commission.

*Superintendence.*

The reservations and parkways of the Metropolitan Park System are grouped in seven divisions, each of which is in charge of a superintendent who reports directly through the Secretary to the Commission. Lynn Fells Parkway has this year been added to the Middlesex Fells Division, and this is the only change in the divisions as heretofore established.

In the wooded reservations the work of suppression of the gypsy and brown-tail moths has been especially important during the year, and has been successful to the extent of preventing serious damage to the holdings of the park system.

There is evidence that less damage is to be anticipated from the brown-tail moth the coming year; but it is also clear that the fight against the gypsy moth must be continued until the pest is reduced by natural conditions or by development of parasites, if the tree growth of the parks is to be preserved.

The police work of the Commission has decidedly increased during the past few years, and becomes more and more important as the beaches, rivers and woods of the park system are more frequented. Exceptional good order has been continued, and seems to be due in some degree to the fidelity and tact with which the police officers have performed their duties. There are many occasions for the exercise of courage and quick judgment, especially in the handling of large crowds and the rescue of persons in positions of danger. The members of the park police have shown commendable zeal in the performance of their duties, and appear to have exercised their powers in such manner as to receive general approval.

**BLUE HILLS DIVISION: BARTHOLOMEW J. COSTELLO, *Superintendent.***

The presence of the gypsy moth in the Blue Hills Reservation was discovered last year, and with the co-operation of State Superintendent Kirkland immediate steps were taken to ascertain the extent of infestation, and to prevent, if possible, the spread of the moth. Sixty-one separate colonies were found distributed through the reservation, most of them being on or near the lines of the highways and roads. Through the winter the locations of the colonies were thoroughly cleaned, the egg clusters creosoted, and all under-brush, dead wood, diseased and broken trees for a distance of 300 feet from the nests removed. In the spring the trees in the colonies were burlapped and tanglefoot bands applied where the ground was rocky and nests had been badly broken. After the tanglefooting was completed, and just as the larvæ were hatching, the ground was burned over. The burlaps were carefully watched, and a considerable number of caterpillars which had escaped the creosoting were destroyed.

It will be necessary this winter to scout the reservation thoroughly, to discover the eggs of any moths which escaped

from the old colonies or have been brought in from outside the reservation during the summer. So far as one can judge from the inspection, as far as it has already gone, the results of this year's work are most encouraging. A considerable number of the colonies appear to have been wiped out, and in the remainder only a few nests have been found. The economy of continuing the present methods of inspection and work of suppression is apparent.

In the easterly section of the Blue Hills, Wampatuck Road has been constructed from the entrance of Furnace Brook Parkway to the Administration Road, which runs through the reservation from east to west. A section of Sassamon Road from the Administration Road to Pine Tree Brook entrance in Milton has been built. The opening of these two roads in conjunction with existing roads gives to Quincy and Milton an attractive circuit drive in the easterly section of the reservation. At Hoosiewhisick Pond new and more convenient entrances have been made from Hillside Street to the roads passing to the east and north of the pond. Portions of the Administration Road have been resurfaced, and small bridges have been replaced by pipe culverts. Some forestry work has been done, and 60,000 small pines have been planted.

In Stony Brook Reservation the gypsy moth has also been found, and the work of inspection and suppression has been carried on in the same manner as in the Blue Hills, and with the same fortunate results. In this reservation, however, the danger is especially great from the infestation of the neighboring woodlands, which extend the entire length of the easterly and westerly boundaries. Especially active work should be carried on along these boundaries, to prevent the moth from entering the reservation in this manner.

The tree growth along Neponset River has been carefully gone over, and in places the gypsy and brown-tail moths were found in large numbers. Careful cleaning, however, prevented any serious damage. In this reservation the Hollingsworth lot near Mattapan has been graded and fences removed, making the approach to Blue Hills Parkway much more attractive. A building has been altered over at this point, to



NANTASKET BEACH RESERVATION.—Automobile Yard.



serve as substation for police and tool house in connection with the care of the parkway. The police signal system has been extended from Blue Hills to cover this parkway.

The brook within the limits of Furnace Brook Parkway in Quincy has been cleaned, and necessary fencing done along the section recently completed. Maples have been planted in Neponset River Parkway between Blue Hill Avenue and Brush Hill Road.

MIDDLESEX FELLS DIVISION : CHARLES P. PRICE, *Superintendent.*

The principal work of the year in the Middlesex Fells Reservation has been in the line of suppression of the gypsy and brown-tail moths. The infestation was so general that the question, as soon as appropriations for the purpose had been made, was, not so much how much should be done, but rather how much could be done before the caterpillars would be hatched out from the millions of egg clusters which were to be found pretty generally distributed in the whole reservation and on the adjacent territory. During the winter the forces of the reservation, increased so far as was practicable, and also several contractors especially experienced in this kind of work, were employed in creosoting; and a very considerable amount of work was done in removing, under expert advice, dead and diseased tree growth, thereby reducing the cost of repressive work. In the spring and early summer tanglefoot bands were applied, and large numbers of caterpillars were destroyed in this manner or prevented from depositing egg clusters in the trees. In sections where for various reasons it was not possible to carry on the creosoting thoroughly, spraying with arsenate of lead was carried on with good effect. The result was on the whole satisfactory, no serious damage having been done to the Fells as a whole, and the infestation, so far as can be judged by the eggs now in sight, having been very materially reduced. The work of creosoting was begun this fall with the balance of the appropriation reserved for that purpose, and, if it can be continued without interruption, should place the Fells in better condition next summer than it has been for a number of years.

A short piece of road on the north border between Main

Street and Bear Hill Entrance in Stoneham has been completed and opened to use. A portion of Forest Street in Medford and its continuation, Main Street in Stoneham, has been repaired, and in connection therewith has received a treatment with different methods of oil surfacing. The experiments were made under some disadvantageous conditions, but the purpose, so far as laying the dust was concerned, was accomplished, and a good surface maintained for several months. It will require time and further experience to determine the exact value of this method of road surfacing. The collection of animals and birds at headquarters on Pond Street attracts constantly increasing numbers of visitors, and the water fowl in Dark Hollow Pond seem to be of interest to the public. The flock of sheep is improving in quality, and the income therefrom substantially contributes to its support. A small nursery of shrubs for use in the parkways has been started.

The trees in Middlesex Fells Parkway have required protection against the moths. Fellsmere Park, through which the parkway passes in Malden, has required especial attention. In this park a path on the westerly side of the pond is being built, and improvements have been made at the entrance of Vista Street. Speeding on the snow has been allowed on a portion of Fellsway West in winter, and arrangements for coasting on a portion of Fellsway East in Malden have been made for the coming winter. Oil and tar experiments have been made on a short section of Fellsway.

The number of openings of Wellington Bridge has been 209 for the year. The passage of the eight-hour law has required an increase in the number of drawkeepers for this and other drawbridges in the charge of the Commission.

Mystic Valley Parkway has been protected against the moths. A portion of the roadway has been resurfaced and the bridges have been repainted. Considerable attention, under expert advice, has been given to the attractive tree growth of this parkway during the past year. A small flock of water fowl has been kept on the Upper Mystic Lake. This lake is largely used for boating by the people of Medford and Winchester.

REVERE BEACH DIVISION: HERBERT W. WEST, *Superintendent.*

The opening of Lynnway and Saugus River Bridge, the establishment of new and extensive places of amusement by private enterprise, and the inauguration of band concerts, are apparently some of the causes which have this year made the attendance at Revere Beach Reservation greater than ever before. From figures obtained from the transportation companies, it appears that nearly if not quite 5,000,000 people came to the beach during the summer season, and on several days the attendance exceeded 100,000. The standard of good order has been maintained, and the comparatively few arrests have been substantially all for minor offences.

A section of the driveway extending northerly from Charles Eliot Circle has been treated with tar macadam. A portion of Beaver Street between Ocean Avenue and the reservation has been turned over to the Commission, and has been constructed as a promenade. The bulkhead near Eliot Circle has been repaired. An additional band stand has been built at the Revere Street entrance. The disposal of the enormous amount of paper, boxes and other rubbish which accumulates on the reservation and is gathered up every morning is a problem that will have to be settled in the near future.

The usual carnival, with certain free attractions on the beach, was carried on from September 3 to 17, under a permit from the Commission, by a committee of the amusement establishments and merchants doing business adjacent to the reservation.

The summer was a favorable one for bathing, and the number using the Revere Beach Bath-house was larger than ever before in its history. The bath-house was opened on the morning of June 14 and closed on the evening of September 15. The total number of bathers was 174,866, of whom 111,192 were males and 63,674 females. The largest day was Sunday, August 19, when the number of bathers was 8,377. Eleven rescues were made by the lifeguards, and 122 cases were treated in the emergency room in the bath-house. Lost articles to the number of 136 were found and returned to their owners. Nearly 300 lost children were returned to

their parents or persons having charge of them. The receipts from the bath-house for the season were \$37,526.85, and the expenditures for the fiscal year (eleven months) \$31,012.73. A much needed enlargement of the emergency room was made last spring. Suits needed for renewals at this and the other bath-houses were made in the sewing-room.

At Winthrop Shore Reservation, besides the usual care, extraordinary repairs have been required after winter storms, which throw large quantities of stone and sand upon the roadway and do damage to the wall and fence.

Lynn Shore Reservation has been extensively used both as a drive and especially as a promenade. Outside of painting of fences and occasional repairs to the wall, no special work has been called for.

In Revere Beach Parkway, under the direction of the Engineer, the roadway has been treated with a tar process from Charles Eliot Circle to Main Street in Everett, a distance of nearly four miles. This was undertaken in the hope of repairing damage to the surface apparently due to automobiles, and in the hope that it would also prevent further injury. The particulars of this work, which was certainly to some degree successful, are given fully in the report of the Engineer.

The development in Nahant Beach Parkway is so far confined to the neighborhood of the Nahant Beach Bath-house. Opposite the bath-house additional settees and a band stand have been built. A considerable amount of planting has been done on either side of and around the bath-house itself, and has added much to the appearance of the building. Some planting has also been done at other points in the parkway, with the co-operation and assistance of the town forester of Nahant.

The Nahant Bath-house was opened on the morning of June 14 and closed on the evening of September 10. This was the first full season of this bath-house, and, although it was well patronized and is designed to be run as economically as good service will permit, the receipts did not fully equal the expenditures. The total number of bathers was 35,306, of which 19,670 were males and 15,636 were females. The

receipts for the season were \$6,989.85, and the expenses for the fiscal year (eleven months) \$7,712.62. The largest day was Sunday, August 19, when the bath-house was used by 2,583 bathers.

RIVERSIDE DIVISION: ALBERT N. HABBERLEY, *Superintendent.*

The gypsy and brown-tail moths were found in this section in greater numbers than ever before, and, as the reservation is narrow in width and is exposed to the neighboring properties for many miles, the danger from incursion of the moth from the outside was much increased. No serious harm has come to the interesting tree growth along the river, but so long as these insect pests are to be found in the bordering towns and cities a persistent fight will have to be kept up to prevent irreparable injury. The use of this section of the river for boating steadily increases. The use of power boats is growing much more common. The swash from these boats, especially when moving rapidly, is not only dangerous to canoeists, but is gradually undermining the banks of the shallow stream. Further precautions for the safety and convenience of the boating public have been adopted. Range lights have been maintained in summer, by which the course through the winding channel can be followed. Lights have been placed at the arches of the bridges, and a boom installed at Hemlock Gorge above the new dam on the West Branch at Newton Upper Falls. Emergency boats with suitable attachments have been placed at various points on the river, and are so planned that they may be of use both in the water and on the ice. Danger signals and lights have been freely used during the skating season, and by caring for certain sections when there is ice, the public have been encouraged to remain where the skating is safe, instead of spreading themselves generally along the river, many portions of which are never fully safe. Of the 213 accidents reported for the season, 185 were from the capsizing of canoes, 19 of which took place in one day. The river patrol are to be credited with 46 rescues from drowning, many of them made under circumstances which reflect credit upon the courage and good judgment of the officers who made them. The success which the department

has had in accidents of this kind is largely due to the hard and steady drill in this kind of service which the officers go through early in the season, under the direction of the superintendent, and which includes practice in emergency rowing, diving, handling of persons in the water, landing them in boats, first aid, etc. There have been the usual band concerts, illumination nights, regattas and similar boating events on the river, all of which have been conducted by local committees with good order and freedom from accidents. Only four arrests have been made during the year, all of which were for statutory offences. Two cases of drowning occurred, both of which were of persons bathing under dangerous conditions. Some additional paths have been built along the river banks, and especial care given to the trees along the river. At Newton Upper Falls the Boylston Street Bridge and the culvert over the East Branch are finished, and the new concrete dams replacing the old wooden structures now hold again the water to its former height in the picturesque Hemlock Gorge. At Forest Grove in Waltham, which is much used by picnic parties, the steep banks have been resurfaced and seeded, additional swings installed and the entrance road and bridge repaired.

SPEEDWAY DIVISION: JOHN L. GILMAN, *Superintendent.*

Soldiers Field Road and the last half of the Speedway have been resurfaced this year. The Speedway has been largely used during the year, and interesting races were held there during the winter, spring and fall under the auspices of the Metropolitan Driving Club, whose club house and stable are conveniently situated near the Everett Street entrance. Last winter there were only twenty-one days of sleighing, as against the seven weeks of the previous season. Some work has been done towards reclaiming the marsh land between the Speedway and the dyke, which it is hoped will gradually improve with the exclusion of salt water, and ultimately support vegetation and tree growth. The buildings on the Children's Pleasure Grounds near Market Street have been kept in order, and are much used in the summer months. Charles River Road in Watertown has been resur-

faced. In this division, which extends up to the Watertown Dam, the trees were carefully gone over last winter, and all nests of gypsy and brown-tail moths removed. The same care will be required the coming winter, for the danger from adjoining territory is the same as that in the Riverside Division. Under the arrangement made with the United States War Department, the buildings standing in the way of the extension of Charles River Road through the Arsenal grounds have been taken down and the materials stored for possible future use, and this work was done under the direction of the superintendent of this division.

In Fresh Pond Parkway and Lowell Memorial Park, in Cambridge, there was also a considerable amount of gypsy and brown-tail moth work. The park has been plowed and reseeded, and the tablets indicating the memorial character of this section of the parkway have been affixed to the posts at the entrances. Since the completion of the enclosing walls the planting required by the plan of development has been done.

BEAVER BROOK DIVISION : ROBERT ELDER, *Superintendent.*

The Beaver Brook Reservation is especially rich in the number, variety and size of its trees, and, as a consequence, has received especial care to prevent injury from the gypsy and brown-tail moths which are found in great numbers in this vicinity. The work has been successfully carried on, and has permitted at the same time other work designed to preserve intact the vegetation of this popular park. It is still one of the most visited of the Metropolitan Parks, and is largely visited by picnicking parties during the summer months. No work of construction has been called for, beyond the repair of walls and paths.

NANTASKET BEACH DIVISION : MOODY LEIGHTON, *Superintendent.*

The portion of Nantasket Avenue which passes through the reservation has been resurfaced and additional catch-basins built, so far as practicable with the special appropriation of \$1,500 made for that purpose by the Legislature of last year. Considerable grading and seeding were done on the reservation itself between the buildings owned by the

State and the road. The buildings themselves required considerable repairs, and the Hotel and Rockland Café were repainted. A section was fenced off for an automobile stand, and was largely used by parties coming to the beach by this method of conveyance. The reservation was largely visited, and excellent order was maintained.

The record of the bath-house was the largest since it was built. The total number of bathers was 35,728, of whom 20,757 were males and 14,971 were females. The largest day, which is also the record day for Nantasket, was Sunday, August 19, when 2,188 bathers used the bath-house. The receipts from bathers were \$7,991.65, to which should be added \$1,934.58 received from sale of steam from the laundry plant to the hotel, roller coaster and merry-go-round, making a total of \$9,926.23. The expenses for the fiscal year (eleven months) were \$8,938.70.

### 3. MISCELLANEOUS.

By chapter 375 of the Acts of the Legislature for the year 1906 the Metropolitan Park Commission was authorized and directed to provide band concerts at such of its parks, beaches and reservations as it should select; and by chapter 455 of the Acts of the same year an appropriation of \$15,000 was made for this purpose. During the summer season concerts were given every afternoon and evening at Revere and Nantasket beaches, and on one afternoon and evening each week at the Nahant Beach Bath-house. One concert was given at Waltham in the Charles River Reservation on the occasion of the annual regatta on June 17. These concerts were listened to by large numbers of people with close attention and evident enjoyment, and they apparently contributed materially to the good order of the crowded reservations where they were given.

After public hearings, followed by careful investigations of routes and conditions, the Commission on July 18 last granted a location for street railway purposes to the Boston Elevated Street Railway Company from Mystic Avenue in Somerville through the Middlesex Fells Parkway to Forest Street in Medford, and thence through the Middlesex Fells



REVERE BEACH RESERVATION.—The Band Stand.



REVERE BEACH RESERVATION.—Listening to Band Concert.



to the Stoneham line; and on the same day and on similar terms to the Boston & Northern Street Railway Company a connecting location from this point through the Middlesex Fells to Main Street in Stoneham at the northerly boundary of the reservation. These locations were not accepted by either of the street railway companies, as required by the provisions of chapter 413 of the Acts of the Legislature for the year 1900, under which the grants of location were made.

Chapter 517 of the Acts of the Legislature of 1906, providing that eight hours should constitute a day's work for laborers, workmen and mechanics employed by the Commonwealth, went into effect last June. This act necessarily reduced the amount of labor provided for under the annual appropriations made by the Legislature for maintenance of the Park System, and added somewhat to the cost of work subsequently contracted for. It necessitated also the employment of additional draw tenders, where, however light the work may be, the hours must necessarily be continuous.

In April last the State Board of Health made to the Legislature their report on the purification of Mystic River, Alewife Brook and the adjacent water courses, ponds and drainage areas, called for by section 2 of chapter 445 of the Acts of the Legislature for the year 1904. Subsequently the Legislature passed a bill, chapter 259 of the Acts of 1906, directing the Metropolitan Park Commission to carry out the plan recommended by the State Board of Health. The act contained an appropriation of \$100,000, which is to be repaid by the cities of Cambridge and Somerville and the towns of Arlington and Belmont. The act has been accepted by the cities and towns in the manner required therein, and the work of preparing plans and estimates has already begun.

The Legislature last year also passed a bill, chapter 158 of the Acts of 1906, to prohibit the pollution of Charles River in the Metropolitan Parks District, and giving authority to the State Board of Health to act in the matter on complaint of the Metropolitan Park Commission or the mayor of any city or the selectmen of any town in the district. The Park Commission has caused an examination to be made through the boating section of the river, and wherever source

of pollution has been found has called the attention of the persons responsible therefor to the provisions of the statute. In nearly every case assurance has been given that the law will be promptly and cheerfully complied with.

The town of Watertown is rebuilding Galen Street Bridge across Charles River near Watertown Square. The Park Commission has conveyed to the town land necessary for changes in Galen Street and the extension of Mount Auburn Street to the bridge, and has also agreed to contribute \$10,000 towards the cost of the bridge, which is to be built of such width and in such location as will for many years at least obviate the necessity of building a park bridge at this point in the proposed future river drive.

After the death of Charles Eliot, the first Landscape Architect of the Commission, in March, 1897, an association was formed to erect somewhere in the Parks System a memorial which should record the service he performed in planning and forwarding the scheme for the Metropolitan Parks System. The location selected was near the summit of Great Blue Hill, and the plan finally chosen was that of a stone bridge which carries across a small ravine a foot path which encircles the top of the hill and gives extensive views in all directions. A stone seat is a part of the bridge, and the memorial tablet forms the back of this seat. On October 13 last the completed memorial was presented by a committee of the association to the Park Commission, and an account of the brief but significant proceedings are printed as an Appendix to this report.

#### 4. FINANCES.

The following tables show in brief form the expenditures under the various park loans for the year ending Dec. 1, 1906:—

##### METROPOLITAN PARKS LOAN FUND.

Blue Hills Reservation :—

Land, . . . . .	\$1,917 00
Miscellaneous, . . . . .	4,103 39
	—————
	\$6,020 39

## Middlesex Fells Reservation :—

Miscellaneous, . . . . .	\$32,544 25
	—————
	\$32,544 25

## Revere Beach Reservation :—

Land, . . . . .	\$200 00
Miscellaneous, . . . . .	52,679 64
	—————
	52,879 64

## Stony Brook Reservation :—

Miscellaneous, . . . . .	\$10 30
	—————
	10 30

## Beaver Brook Reservation :—

Miscellaneous, . . . . .	\$546 86
	—————
	546 86

## Hemlock Gorge Reservation :—

Miscellaneous, . . . . .	\$51 50
	—————
	51 50

## Charles River Reservation :—

Land, . . . . .	\$1,100 00
Miscellaneous, . . . . .	8,733 60
	—————
	9,833 60

## Neponset River Reservation :—

Land, . . . . .	\$334 10
Miscellaneous, . . . . .	192 40
	—————
	526 50

## Mystic River Reservation :—

Land, . . . . .	\$2,801 34
Miscellaneous, . . . . .	63,228 53
	—————
	66,029 87

## Lynn Shore Reservation :—

Land, . . . . .	\$96,849 35
Miscellaneous, . . . . .	3,717 94
	—————
	100,567 29

## Quincy Shore Reservation :—

Land, . . . . .	\$660 00
Miscellaneous, . . . . .	64,308 46
	—————
	64,968 46

## Winthrop Shore Reservation :—

Miscellaneous, . . . . .	\$247 82
	—————
	247 82

## King's Beach Reservation :—

Land, . . . . .	\$450 00
Miscellaneous, . . . . .	18 85
	—————
	468 85

## Wellington Bridge :—

Miscellaneous, . . . . .	\$364 54
	—————
	\$364 54

## Boylston Street Bridge :—

Miscellaneous, . . . . .	\$34,284 24
	—————
General expense, . . . . .	34,284 24
	4,916 97
	—————
	\$374,261 08

## METROPOLITAN PARKS LOAN FUND, SERIES II.

## Blue Hills Parkway :—

Miscellaneous, . . . . .	\$77 96
	—————
	\$77 96

## Middlesex Fells Parkway :—

Land, . . . . .	\$16,895 62
Miscellaneous, . . . . .	3,444 85
	—————
	20,340 47

## Mystic Valley Parkway :—

Land, . . . . .	\$1,002 51
Miscellaneous, . . . . .	6,629 84
	—————
	7,632 35

## Revere Beach Parkway :—

Miscellaneous, . . . . .	\$6,369 72
	—————
	6,369 72

## Neponset River Parkway :—

Land, . . . . .	\$37,410 15
Miscellaneous, . . . . .	1,455 76
	—————
	38,865 91

## Fresh Pond Parkway :—

Miscellaneous, . . . . .	\$1,786 65
	—————
	1,786 65

## Furnace Brook Parkway :—

Land, . . . . .	\$1,456 00
Miscellaneous, . . . . .	67,619 32
	—————
	69,075 32

## Nahant Beach Parkway :—

Miscellaneous, . . . . .	\$16,993 30
	—————
	16,993 30

## Lynn Fells Parkway :—

Land, . . . . .	\$31,137 96
Miscellaneous, . . . . .	8,473 89
	—————
	39,611 85

## Winthrop Parkway :—

Land, . . . . .	\$1,472 50
Miscellaneous, . . . . .	1,991 53
	—————

\$3,464 03

## Charles River Speedway :—

Miscellaneous, . . . . .	\$28 46
	—————

28 46

## Blue Hills Roads :—

Miscellaneous, . . . . .	\$237 37
	—————

237 37

## Middlesex Fells Roads :—

Miscellaneous, . . . . .	\$5,299 45
	—————

5,299 45

## Lynnway :—

Miscellaneous, . . . . .	\$11,113 46
	—————

11,113 46

## General expense, . . . . .

5,476 29

—————

\$226,372 59

The following tables show the total amount expended in each loan, the cost of each reservation and parkway to Dec. 1, 1906, and the amounts charged by the Auditor's department to meet the sinking fund and interest requirements to Jan. 1, 1900:—

## METROPOLITAN PARKS LOAN FUND.

## Blue Hills Reservation :—

Land, . . . . .	\$362,562 04
Miscellaneous, . . . . .	286,984 89
	—————

\$649,546 93

## Middlesex Fells Reservation :—

Land, . . . . .	\$690,782 43
Miscellaneous, . . . . .	285,493 35
	—————

976,275 78

## Revere Beach Reservation :—

Land, . . . . .	\$1,162,947 67
Miscellaneous, . . . . .	797,276 52
	—————

1,960,224 19

## Stony Brook Reservation :—

Land, . . . . .	\$281,243 87
Miscellaneous, . . . . .	75,711 82
	—————

356,955 69

## Beaver Brook Reservation :—

Land, . . . . .	\$29,819 29
Miscellaneous, . . . . .	23,812 19
	—————
	\$53,631 48

## Hemlock Gorge Reservation :—

Land, . . . . .	\$53,254 00
Miscellaneous, . . . . .	15,526 94
	—————
	68,780 94

## Charles River Reservation :—

Land, . . . . .	\$1,476,747 55
Miscellaneous, . . . . .	260,301 55
	—————
	1,737,049 10

## Neponset River Reservation :—

Land, . . . . .	\$221,014 47
Miscellaneous, . . . . .	46,246 49
	—————
	267,260 96

## Mystic River Reservation :—

Land, . . . . .	\$239,783 21
Miscellaneous, . . . . .	113,539 73
	—————
	353,322 94

## Lynn Shore Reservation :—

Land, . . . . .	\$328,274 29
Miscellaneous, . . . . .	145,730 29
	—————
	474,004 58

## Quincy Shore Reservation :—

Land, . . . . .	\$71,644 55
Miscellaneous, . . . . .	118,163 00
	—————
	189,807 55

## Winthrop Shore Reservation :—

Land, . . . . .	\$51,067 32
Miscellaneous, . . . . .	165,385 88
	—————
	216,453 20

## Hart's Hill Reservation :—

Land, . . . . .	\$10,000 00
Miscellaneous, . . . . .	103 95
	—————
	10,103 95

## King's Beach Reservation :—

Land, . . . . .	\$24,297 21
Miscellaneous, . . . . .	1,538 13
	—————
	25,835 34

## West Roxbury Parkway :—

Land, . . . . .	\$244,976 01
Miscellaneous, . . . . .	8,313 67
	—————
	253,289 68

Wellington Bridge :—				
Miscellaneous, . . . . .	\$185,317	42		
			185,317	42
Nahant Beach Bath-house :—				
Miscellaneous, . . . . .	\$67,794	58		
			67,794	58
Boylston Street Bridge :—				
Miscellaneous, . . . . .	\$43,576	82		
			43,576	82
General expense, . . . . .			152,556	92
			\$8,041,788	05
Sinking fund requirements to 1896, . . . . .	\$18,980	18		
Care and maintenance to July 1, 1896, . . . . .	85,813	46		
Care and maintenance, July 1, 1896, to . . . . .				
Jan. 1, 1897, . . . . .	19,604	06		
Sinking fund assessment for 1897, . . . . .	63,630	70		
Sinking fund assessment for 1898, . . . . .	9,755	55		
Sinking fund assessment for 1899, . . . . .	64,224	00		
Interest, . . . . .	28,318	61		
			290,326	56
Total charged to Dec. 1, 1906, . . . . .			\$8,332,114	61

## METROPOLITAN PARKS LOAN FUND, SERIES II.

Blue Hills Parkway :—				
Land, . . . . .	\$133,492	02		
Miscellaneous, . . . . .	269,394	10		
			402,886	12
Middlesex Fells Parkway :—				
Land, . . . . .	\$245,300	01		
Miscellaneous, . . . . .	460,858	44		
			706,158	45
Mystic Valley Parkway :—				
Land, . . . . .	\$203,990	91		
Miscellaneous, . . . . .	246,149	76		
			450,140	67
Revere Beach Parkway :—				
Land, . . . . .	\$536,852	35		
Miscellaneous, . . . . .	837,805	44		
			1,374,657	79
Neponset River Parkway :—				
Land, . . . . .	\$83,941	75		
Miscellaneous, . . . . .	35,745	49		
			119,687	24

## Beaver Brook Reservation :—

Land, . . . . .	\$29,819 29
Miscellaneous, . . . . .	23,812 19
<hr/>	
	\$53,631 48

## Hemlock Gorge Reservation :—

Land, . . . . .	\$53,254 00
Miscellaneous, . . . . .	15,526 94
<hr/>	
	68,780 94

## Charles River Reservation :—

Land, . . . . .	\$1,476,747 55
Miscellaneous, . . . . .	260,301 55
<hr/>	
	1,737,049 10

## Neponset River Reservation :—

Land, . . . . .	\$221,014 47
Miscellaneous, . . . . .	46,246 49
<hr/>	
	267,260 96

## Mystic River Reservation :—

Land, . . . . .	\$239,783 21
Miscellaneous, . . . . .	113,539 73
<hr/>	
	353,322 94

## Lynn Shore Reservation :—

Land, . . . . .	\$328,274 29
Miscellaneous, . . . . .	145,730 29
<hr/>	
	474,004 58

## Quincy Shore Reservation :—

Land, . . . . .	\$71,644 55
Miscellaneous, . . . . .	118,163 00
<hr/>	
	189,807 55

## Winthrop Shore Reservation :—

Land, . . . . .	\$51,067 32
Miscellaneous, . . . . .	165,385 88
<hr/>	
	216,453 20

## Hart's Hill Reservation :—

Land, . . . . .	\$10,000 00
Miscellaneous, . . . . .	103 95
<hr/>	
	10,103 95

## King's Beach Reservation :—

Land, . . . . .	\$24,297 21
Miscellaneous, . . . . .	1,538 13
<hr/>	
	25,835 34

## West Roxbury Parkway :—

Land, . . . . .	\$244,976 01
Miscellaneous, . . . . .	8,313 67
<hr/>	
	253,289 68

## Wellington Bridge :—

Miscellaneous, . . . . .	\$185,317 42
	—————
	\$185,317 42

## Nahant Beach Bath-house :—

Miscellaneous, . . . . .	\$67,794 58
	—————
	67,794 58

## Boylston Street Bridge :—

Miscellaneous, . . . . .	\$43,576 82
	—————
	43,576 82

General expense, . . . . .	152,556 92
	—————
	\$8,041,788 05

Sinking fund requirements to 1896, . . . . .	\$18,980 18
Care and maintenance to July 1, 1896, . . . . .	85,813 46
Care and maintenance, July 1, 1896, to Jan. 1, 1897, . . . . .	19,604 06
Sinking fund assessment for 1897, . . . . .	63,630 70
Sinking fund assessment for 1898, . . . . .	9,755 55
Sinking fund assessment for 1899, . . . . .	64,224 00
Interest, . . . . .	28,318 61
	—————
	290,326 56

Total charged to Dec. 1, 1906, . . . . .	\$8,332,114 61
--	----------------

## METROPOLITAN PARKS LOAN FUND, SERIES II.

## Blue Hills Parkway :—

Land, . . . . .	\$133,492 02
Miscellaneous, . . . . .	269,394 10
	—————
	\$402,886 12

## Middlesex Fells Parkway :—

Land, . . . . .	\$245,300 01
Miscellaneous, . . . . .	460,858 44
	—————
	706,158 45

## Mystic Valley Parkway :—

Land, . . . . .	\$203,990 91
Miscellaneous, . . . . .	246,149 76
	—————
	450,140 67

## Revere Beach Parkway :—

Land, . . . . .	\$536,852 35
Miscellaneous, . . . . .	837,805 44
	—————
	1,374,657 79

## Neponset River Parkway :—

Land, . . . . .	\$83,941 75
Miscellaneous, . . . . .	35,745 49
	—————
	119,687 24

## Fresh Pond Parkway :—

Land, . . . . .	\$44,086 25
Miscellaneous, . . . . .	29,814 23
	—————
	\$73,900 48

## Furnace Brook Parkway :—

Land, . . . . .	\$138,793 49
Miscellaneous, . . . . .	114,375 57
	—————
	253,169 06

## Nahant Beach Parkway :—

Land, . . . . .	\$80,940 78
Miscellaneous, . . . . .	67,571 28
	—————
	148,512 06

## Lynn Fells Parkway :—

Land, . . . . .	\$31,137 96
Miscellaneous, . . . . .	16,468 25
	—————
	47,606 21

## Winthrop Parkway :—

Land, . . . . .	\$16,669 00
Miscellaneous, . . . . .	2,772 33
	—————
	19,441 33

## Charles River Speedway :—

Miscellaneous, . . . . .	\$521,145 23
	—————
	521,145 23

## Blue Hills Roads :—

Miscellaneous, . . . . .	\$7,998 22
	—————
	7,998 22

## Middlesex Fells Roads :—

Miscellaneous, . . . . .	\$53,003 98
	—————
	53,003 98

## Stony Brook Roads :—

Miscellaneous, . . . . .	\$37,183 45
	—————
	37,183 45

## Lynnway :—

Land, . . . . .	\$20,500 00
Miscellaneous, . . . . .	109,626 77
	—————
	130,126 77

## Spy Pond Parkway :—

Miscellaneous, . . . . .	\$89 04
	—————
	89 04

## General expense, . . . . .

	98,193 78
	—————
	\$4,443,899 88

Sinking fund requirement for 1896, . . . . .	\$3,650 03
Sinking fund assessment for 1897, . . . . .	14,057 10
Sinking fund assessment for 1898, . . . . .	3,765 08
Sinking fund assessment for 1899, . . . . .	15,396 00
One-half interest, . . . . .	22,327 68
	—————
	\$59,195 89
Total charged to Dec. 1, 1906, . . . . .	\$4,503,095 77

## NANTASKET BEACH LOAN.

Land, . . . . .	\$603,329 57
Miscellaneous, . . . . .	102,551 93
Total charged to Dec. 1, 1906, . . . . .	\$705,881 50

The appropriations heretofore made are as follows:—

## METROPOLITAN PARKS LOAN FUND.

Original appropriation, chapter 407, Acts of 1893, . . . . .	\$1,000,000 00
First Revere Beach Act, chapter 483, Acts of 1894, . . . . .	500,000 00
Charles River Act, chapter 509, Acts of 1894, . . . . .	300,000 00
Second Revere Beach Act, chapter 305, Acts of 1895, . . . . .	500,000 00
General appropriation, chapter 466, Acts of 1896, . . . . .	1,000,000 00
General appropriation, chapter 464, Acts of 1897, . . . . .	500,000 00
General appropriation, chapter 530, Acts of 1898, . . . . .	1,000,000 00
Revere Beach Bath-house Act, chapter 142, Acts of 1899, . . . . .	125,000 00
General appropriation, chapter 396, Acts of 1899, . . . . .	300,000 00
Charles River Improvement Act, chapter 465, Acts of 1900, . . . . .	50,000 00
Fuller's Wharf Act, chapter 467, Acts of 1900, . . . . .	30,000 00
General appropriation, chapter 445, Acts of 1901, . . . . .	450,000 00
Mystic River Bridge Act, chapter 492, Acts of 1901, . . . . .	200,000 00
General appropriation, chapter 290, Acts of 1903, . . . . .	125,000 00
Newton Upper Falls Bridge Act, chapter 391, Acts of 1903, . . . . .	40,000 00
Continuing appropriation, chapter 429, Acts of 1903, for 1903, . . . . .	300,000 00
For 1904, . . . . .	300,000 00
For 1905, . . . . .	300,000 00
For 1906, . . . . .	300,000 00
Nahant Beach Bath-house Act, chapter 326, Acts of 1904, . . . . .	70,000 00
Reimbursing loan for moth expense, chapter 486, Acts of 1906, . . . . .	50,000 00

Purification of Mystic River, Alewife Brook and adjacent water courses, ponds and drainage areas, chapter 529, Acts of 1906, . . . . .	\$100,000 00
	\$7,540,000 00
To provide for interest and sinking fund requirements to 1900, chapter 311, Acts of 1897, . . . . .	900,000 00
Total amount of loans, . . . . .	\$8,440,000 00
Amounts received from sales of buildings, receipts from bath-house, fines, etc., . . . . .	198,334 01
Total, . . . . .	\$8,638,334 01
Total charged to loans, . . . . .	8,332,114 61
Balance remaining in hands of State Treasurer, . . . . .	\$306,219 40

## METROPOLITAN PARKS LOAN FUND, SERIES II.

Original boulevard, chapter 288, Acts of 1894, . . . . .	\$500,000 00
General appropriation, chapter 472, Acts of 1896, . . . . .	500,000 00
General appropriation, chapter 521, Acts of 1897, . . . . .	1,000,000 00
Saugus Bridge Act, chapter 547, Acts of 1898, . . . . .	100,000 00
General appropriation, chapter 428, Acts of 1899, . . . . .	500,000 00
Mattapan Bridge Act, chapter 443, Acts of 1900, . . . . .	75,000 00
Winchester Act, chapter 444, Acts of 1900, . . . . .	50,000 00
Revere Beach Parkway Act, chapter 445, Acts of 1900, . . . . .	200,000 00
General appropriation, chapter 172, Acts of 1902, . . . . .	450,000 00
General appropriation, chapter 359, Acts of 1903, . . . . .	110,000 00
Continuing appropriation, chapter 419, Acts of 1903, for 1903, . . . . .	300,000 00
For 1904, . . . . .	300,000 00
For 1905, . . . . .	300,000 00
For 1906, . . . . .	300,000 00
	\$4,685,000 00

To provide for interest and sinking fund requirements to 1900, chapter 311, Acts of 1897, . . . . .	100,000 00
Total amount of loans, . . . . .	\$4,785,000 00
Receipts from sales, etc., . . . . .	29,907 41
Total, . . . . .	\$4,814,907 41
Total of amounts charged to loans, . . . . .	4,503,095 77
Balance remaining in hands of State Treasurer, . . . . .	\$311,811 64

## NANTASKET BEACH LOAN.

Appropriation, chapter 464, Acts of 1899, . . . . .	\$600,000 00
Appropriation, chapter 456, Acts of 1901, . . . . .	100,000 00
<hr/>	
Total amount of loans, . . . . .	\$700,000 00
Receipts from rents, etc., . . . . .	5,881 50
<hr/>	
Total, . . . . .	\$705,881 50
Total of amounts charged to loans, . . . . .	705,881 50

Respectfully submitted,

JOHN WOODBURY,

*Secretary.*

DEC. 1, 1906.

## REPORT OF THE LANDSCAPE ARCHITECTS.

---

Hon. WILLIAM B. DE LAS CASAS, *Chairman, Metropolitan Park Commission, Boston, Mass.*

SIR:—We beg to submit the following report for the year ending Nov. 30, 1906:—

In the Middlesex Fells, in connection with the campaign against the gypsy and brown-tail moths, forestry work has actively continued under our direction. The general removal of dead and dying trees, and of unhealthy and defective trees wherever they could safely be spared, has been extended over the greater part of the reservation. There have been lamentably few cases where the number of thoroughly healthy trees has been sufficient to require the cutting of vigorous and otherwise desirable trees merely to give opportunity to their more promising fellows. In certain regions, where the normal close-growing woods which are called for by our forest plan are to be varied by a more open type of woods, the cutting has been comparatively severe. As in the previous work of this sort, our object has been to protect and encourage all the trees which may by any probability be of value to the future sylvan beauty of the Fells, by freeing them from the present twofold competition of such trees as we feel confident cannot be of any future advantage to the woods. The competition of these trees with their betters is now twofold because they not only usurp a share of light, moisture and fertility, but also draw upon the limited funds available for protecting the trees from the insect scourges of the locality. The marking of the trees has been done by assistants from our office, guided by the forest plan and by personal direction on the ground. In connection with this work we have also started a careful investigation of the pathological his-

tory of a considerable number of typical trees, as shown by cross-sectioning the trunk and roots to ascertain the normal effect on their health and vigor of the several kinds of injuries and diseases to which the coppice trees of this locality are most subject. We believe that this investigation will be of considerable service in affording a more definite basis for choice between trees nearly all of which are more or less defective. Our observations continue to give evidence of the surprising amount of internal damage to the trees and checking of growth caused by even the slightest ground fires, such as have occurred from time to time ever since the reservation came into the control of the Commission.

A tentative general plan for roads in the Middlesex Fells, in connection with the forest plan, was submitted to the Commission for consideration.

Along the borders of the Stony Brook Reservation a beginning was made, as a protective measure, in marking undesirable trees for removal in accordance with the forest plan prepared some years ago; and in the Beaver Brook Reservation a small amount of similar work was directed by us.

For two important sections of the Charles River Reservation general preliminary plans were prepared, — the boating section from Hemlock Gorge to Waltham and the basin section from Watertown to Essex Street. In the case of a river reservation of this sort, where only narrow and sometimes discontinuous margins of land are held by the Commission, and the development of the use of the reservation depends largely upon the private enterprise of abutters and upon the uncontrolled drift of public interest, it is impossible to forecast at all fully the future requirements; and any general plan must be regarded not as a definite and inflexible project, but as a consistent framework, to be built upon, added to and altered as new circumstances arise. If it is so altered and kept up to date from year to year, as experience throws new light upon the remoter future it should serve to avert many discrepancies and conflicts of an æsthetic and of a practical kind which are likely to occur in meeting local requirements without regard to such a general scheme. At certain points, as at the United States Arsenal grounds

and nearabouts, more definite plans for planting and for grading have been required, to give answer to specific questions about the most economical disposition of dredged material, etc.

Among the shore reservations Nantasket Beach has called for some revision of earlier planting plans, and for plans for a possible extension of the reservation southward, including a driveway location around the bold and rocky headland that forms the southern buttress of the beach; for Revere Beach Reservation plans were prepared for a possible development between Charles Eliot Circle and the proposed Ocean Pier; while at Lynn Shore departures from the taking line originally contemplated necessitated a difficult rearrangement of the previous plans for development throughout several hundred feet, extending into the Nahant Beach Reservation. Plans for improving Red Rock Point have been taken up, and an examination made of the soil conditions with a view to establishing some tree growth on this conspicuous and important promontory.

Among the parkways our services have been confined mainly to advice and plans as to details of planting at certain points; but general preliminary plans have been made for Fellsmere Park as a part of Fellsway East, and for a modification of a route formerly proposed for extending Furnace Brook Parkway to connect with Quincy Shore.

Detailed information concerning the various items of construction, planting and maintenance, which have been actually carried out during the current year under our plans or in consultation with us by the Departments of Engineering and Superintendence, will be found in the reports of those departments. Appended is a summary of the plans and reports submitted during the year.

Respectfully submitted,

OLMSTED BROTHERS.

DEC. 1, 1906.

*Plans and Reports made for Metropolitan Park Commission between Dec. 1, 1905, and Dec. 1, 1906, by Olmsted Brothers.*

	Topographical Maps.	Studies.	Preliminary and General.	Grading and Con- struction.	Planting and For- estry.	Reports.	Totals.
<i>Parkways.</i>							
Middlesex Fells, . . .	—	—	—	4	1	—	5
Fresh Pond, . . .	—	—	—	—	2	1	3
Furnace Brook, . . .	—	3	2	—	1	2	8
Nahant Beach, . . .	—	—	—	—	1	—	1
Lynn Fells, . . .	—	—	—	—	1	—	1
<i>Reservations.</i>							
Blue Hills, . . .	1	2	—	2	—	1	6
Middlesex Fells, . . .	—	1	1	1	6	5	14
Hemlock Gorge, . . .	—	—	—	—	—	1	1
Charles River, . . .	1	5	4	7	1	4	22
Mystic River, . . .	—	—	1	9	—	—	10
King's Beach and Lynn Shore, .	—	1	—	—	—	—	1
Revere Beach, . . .	2	2	1	—	—	1	6
Quincy Shore, . . .	1	1	1	—	—	—	3
Nantasket Beach, . . .	—	5	3	—	—	2	10
General, . . .	—	—	—	—	—	2	2
Totals, . . .	5	20	13	23	13	19	93

## REPORT OF THE ENGINEER.

---

Hon. WILLIAM B. DE LAS CASAS, *Chairman, Metropolitan Park Commission.*

SIR:—I beg to submit the following report of the work of the Engineering Department for the year ending Dec. 1, 1906.

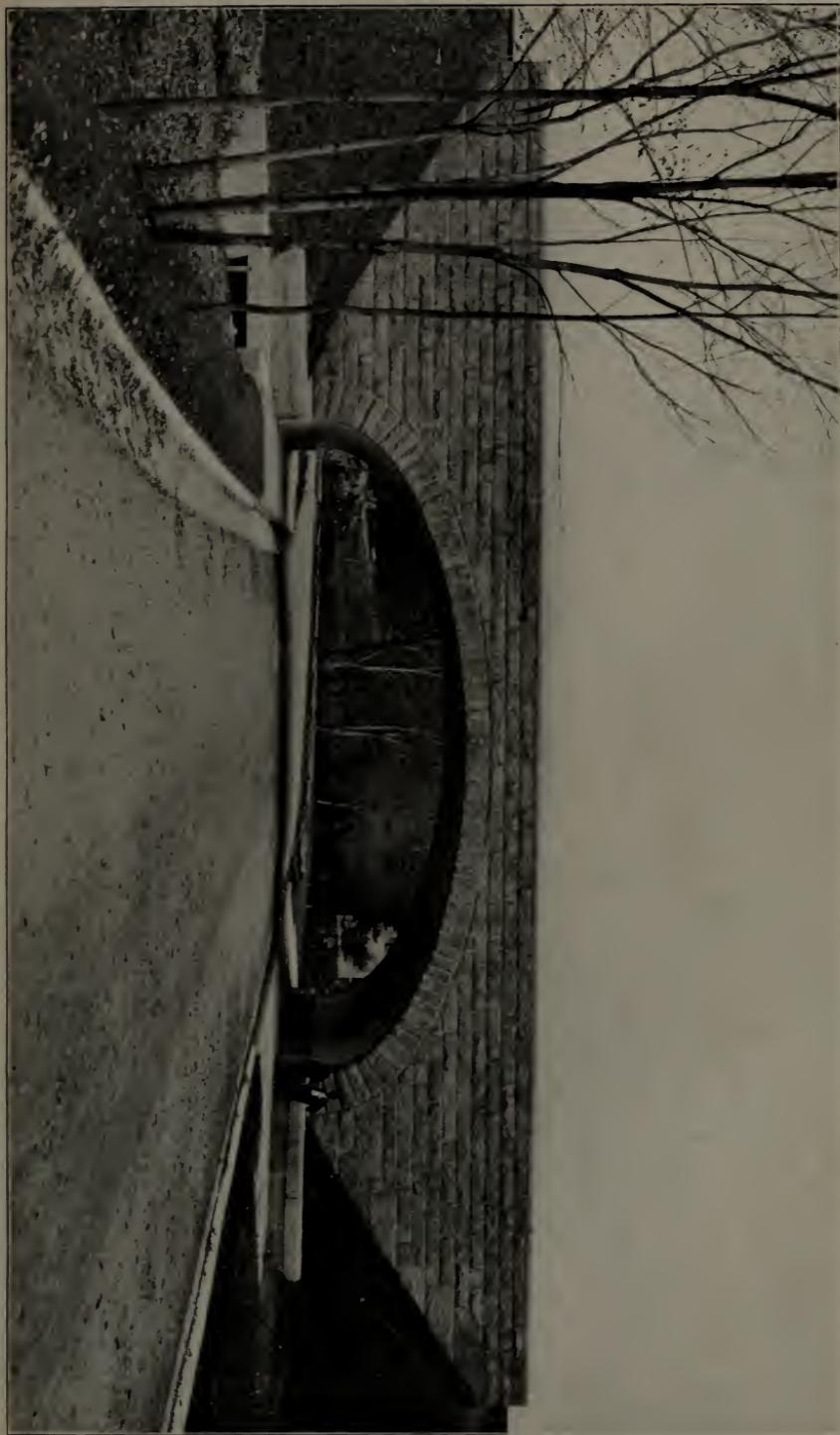
The organization of the department has remained practically the same as last year, except that the number of employees has been diminished from 45 at the beginning of the year to 31 at the present time, the decrease being due to the fact that less preliminary work has been done, and the construction work has been so confined to certain localities as to make it possible to work the men to good advantage. The present classification is as follows: 4 assistant engineers, 2 draftsmen, 5 instrument men in charge of parties, 14 rod-men, 4 inspectors, 1 clerk and 1 stenographer.

As formerly, the different classes of work have been under the supervision of division engineers: C. Barton Pratt in charge of construction, David A. Ambrose in charge of preliminary work, and Louis V. Foster in charge of general office work and drafting.

The construction work under the department has been of the usual varied description, including grading, surfacing, paving, drainage, river and shore work, and stone, concrete and reinforced concrete masonry work.

This department has given general inspection to all work done in the parkways and reservations under permits and licenses issued by the Commission to cities, towns, corporations and individuals. Ninety-three of these permits have been issued, and the total cost of the inspection of the work has been \$635.53.

Photographs of the most important pieces of work have been taken from time to time by the department, to be kept as records of the progress of the work.



FURNACE BROOK PARKWAY — Granite Branch Bridge.



The total cost of conducting the department has been as follows:—

Services, . . . . .	\$37,014 15
Equipment, . . . . .	126 12
Operating expenses, . . . . .	2,367 66
<hr/>	
Total, . . . . .	\$39,507 93

The cost of the construction work which has been done under the supervision of this department has amounted to \$285,626.18, exclusive of the cost of engineering and inspection. The cost of engineering and inspection incidental to the construction work has been \$21,134.04.

An appraisal of the property in charge of the department, omitting the value of maps, plans, notes and records, is as follows:—

Equipment :—

Offices, . . . . .	\$2,237 25
Surveying and drawing instruments, . . . . .	2,864 20
Miscellaneous, . . . . .	41 85
<hr/>	

Supplies :—

General, . . . . .	1,261 87
<hr/>	

Total, . . . . . \$6,405 17

Details of the work done under the supervision of this department are given in the following sections of parkway and reservation, and in the tables appended.

### PARKWAYS.

*Blue Hills Parkway.*—A conduit has been laid in the westerly side of the parkway for a police signal system. The work was done by the reservation forces and the engineering services were furnished by this department.

*Furnace Brook Parkway.*—The work of constructing a reinforced concrete and stone masonry arch bridge for the Granite Branch of the New York, New Haven & Hartford Railroad over the parkway has been completed. The work was finished on May 23, 1906, but, on account of the neces-

sity for the removal of some defective work in culvert and walks and replacing the same with new, the work under the contract was not actually completed until Aug. 22, 1906. Operations were discontinued on Dec. 28, 1905, on account of winter weather, and resumed again April 9, 1906.

As was stated in a former report, it was necessary to construct a temporary trestle along the westerly side of the site of the proposed bridge for the operation of trains, and they were run over it from Oct. 10, 1905, to Jan. 2, 1906, when they were returned to the old roadbed and over the new bridge.

The total cost of this work, including the cost of work incidental thereto, which was done by the railroad company, has been as follows:—

Previously reported :—

Construction and incidentals, contract	
No. 91, . . . . .	\$15,074 46
Engineering and inspection, . . . . .	865 60
	—————
	\$15,940 06

Year ending Dec. 1, 1906 :—

Construction, contract No. 91, . . . . .	\$4,759 61
Temporary trestle, . . . . .	8,538 12
Incidentals, . . . . .	110 80
Engineering and inspection, . . . . .	1,065 21
	—————
	14,473 74

Total, . . . . .	\$30,413 80
------------------	-------------

Construction plans and specifications have been prepared for grading, surfacing and other work necessary for finishing the parkway from Adams Street to Blue Hills Reservation, Quincy. On April 23, 1906, the following bids were received for this work:—

Bruno, Salomone & Petitti, Boston, . . . . .	\$51,573 50
Ruggles & Fallon, Boston, . . . . .	37,619 00
Svea Construction Company, Boston, . . . . .	37,400 80
James J. Coughlin Construction Company, Boston, . . . . .	36,757 40
William Shea & Son, West Quincy, . . . . .	34,845 50
John Cashman, Quincy, . . . . .	34,065 50
James Doherty, Roxbury, . . . . .	30,336 50
Coleman Brothers, Boston, . . . . .	30,256 00

Rowe & Perini, South Framingham, . . . . .	\$29,337 25
Fred S. & A. D. Gore Corporation, Boston, . . . . .	29,220 10
T. H. Gill & Co., Boston, . . . . .	27,893 80
Hugh Nawn Contracting Company, Boston, . . . . .	27,714 50

The contract was awarded to Hugh Nawn Contracting Company, and the work was begun May 14, 1906, and is nearly completed. During the progress of the work under this contract considerable other work has been added, including the construction of masonry culverts for Furnace Brook at Willard Street, Malden Street, Reardon Street and Quarry Street, and the grading and finishing of the portions of Reardon Street and Quarry Street which come within the parkway takings; also the construction of a conduit for police signal system, and some additional drains.

The work of building fences along the entire length of the above-mentioned section of parkway is in progress, being done by the reservation forces, and engineering and supervision has been furnished by this department.

The total estimated cost of this work to Dec. 1, 1906, has been as follows: —

Construction, contract No. 96, . . . . .	\$36,009 48
Materials for police signal system, . . . . .	1,690 00
Incidentals, . . . . .	1,413 69
Engineering and inspection, . . . . .	2,826 96
<hr/>	
Total, . . . . .	\$41,940 13

Surveys have been made and plans are in progress for takings from Quincy Shore Reservation to Hancock Street.

*Lynn Fells Parkway.* — Construction plans and specifications for building concrete abutments for a steel plate girder bridge for the Western Division of the Boston & Maine Railroad over the parkway in Melrose have been prepared. On Sept. 10, 1906, bids were received as follows: —

F. S. & A. D. Gore Corporation, Boston, . . . . .	\$9,024 10
Coleman Brothers, Boston, . . . . .	7,610 00
Ellis & Buswell Company, Woburn, . . . . .	5,180 00
T. H. Gill & Co., Boston, . . . . .	4,829 00
T. Stuart & Son Company, Newton, . . . . .	4,515 00

The contract was awarded to T. Stuart & Son Company, the work was begun on Sept. 25, 1906, and all work, except the dressing of the surfaces of the concrete, which cannot be done until next spring, was completed on Nov. 17, 1906.

The abutments are U-shaped, of monolithic construction, with a gravel concrete facing which is to be picked to a rough surface. The wing walls are surmounted by light parapet walls, to more effectually shut out the tracks at the approach to the bridge. The bridge seat courses and copings are constructed with a facing mortar made of Portland cement and crushed-stone screenings, and the surfaces are to be bush-hammered.

The estimated cost of this work to Dec. 1, 1906, has been as follows:—

Construction, contract No. 101, . . . . .	\$4,436 20
Incidentals, . . . . .	46 57
Engineering and inspection, . . . . .	381 05
<hr/>	
Total, . . . . .	\$4,863 82

Arrangements were made with the Boston & Maine Railroad Company whereby its engineering department, in consultation with this department, has prepared plans and specifications for a steel plate girder bridge for the above-mentioned location. In accordance with the agreements with the railroad company, its engineering department was also required to construct a temporary trestle, which was necessary to support the tracks during the construction of the abutments, and to let the contract for and supervise the construction of the steel superstructure of the bridge, the reasonable cost and expense of the work done by them to be paid by the Commonwealth.

On Sept. 8, 1906, the following bids were received for building the superstructure of the bridge:—

L. F. Shoemaker & Co., . . . . .	\$7,598 00
Pennsylvania Steel Company, . . . . .	7,380 00
Boston Bridge Works, . . . . .	6,933 00
American Bridge Company, . . . . .	6,745 00
Phoenix Bridge Company, . . . . .	6,700 00
New England Structural Company, . . . . .	6,463 00

The proposal of the New England Structural Company was accepted, the work of building the bridge in the shops is now in progress, and it is expected that erection will be begun about the first part of January, 1907.

The work of constructing the temporary trestle was begun July 15, 1906, and completed Sept. 2, 1906.

Construction plans and specifications for building to sub-grade the parkway from Middlesex Fells Reservation to Green Street, Melrose, have been prepared, and the following bids were received on Nov. 5, 1906:—

William H. Ward, Lowell, . . . . .	\$56,718 00
Bruno, Salomone & Petitti, Boston, . . . . .	56,120 00
Fred E. Ellis, Melrose, . . . . .	53,362 00
W. Shea & Son, West Quincy, . . . . .	53,150 00
T. Stuart & Son Company, Newton, . . . . .	45,804 00
A. G. Tomassello, Dorchester, . . . . .	45,386 00
Frank Williams, Boston, . . . . .	44,254 00
A. Delsignore, Boston, . . . . .	43,218 40
M. McDonough, Swampscott, . . . . .	42,392 00
Coleman Brothers, Boston, . . . . .	41,898 00
R. F. Hudson, Melrose, . . . . .	41,886 00
T. H. Gill & Co., Boston, . . . . .	38,879 20
Rowe & Perini, South Framingham, . . . . .	33,756 00

The contract was awarded to Rowe & Perini, the lowest bidders, and work was begun Nov. 19, 1906, and is now in progress.

The estimated cost of this work to Dec. 1, 1906, has been as follows:—

Construction, contract No. 102, . . . . .	\$390 00
Incidentals, . . . . .	39 96
Engineering and inspection, . . . . .	28 95
<hr/>	
Total, . . . . .	\$458 91

The proposed parkway passes through Ell Pond Park, a public reservation belonging to the city of Melrose. This land is generally very low and swampy, and for a distance of about 1,700 feet the parkway passes over this swampy land. Borings taken by this department showed from 10

to 30 feet of soft mud throughout this location, and, as it was proposed to make a fill about 4 feet in depth over the entire distance, it was decided to construct a mattress of trees and tree limbs over the surface on which the fill was to be placed, to prevent as far as possible the settlement which would probably result from the weight of the filling material on the soft ground. The work of building this mattress was begun on July 19, 1906, and completed Aug. 30, 1906. The material for the mattress was obtained from the Middlesex Fells Reservation from necessary cutting, and the work was done by the reservation forces and Coleman Bros., contractors, working in conjunction. The area covered was a strip 80 feet wide and about 1,700 feet long. The total cost of the work has been \$2,518.08.

*Lynnway.* — The work of surfacing and finishing the parkway from the end of Revere Beach Reservation at Northern Circle to and including Saugus River Bridge, which was interrupted in December, 1905, by the unfavorable weather, was resumed about April 1, 1906, and completed July 31, 1906. The total cost of the work has been as follows: —

Previously reported : —

Construction and incidentals, contract	
No. 83, . . . . .	\$9,193 65
Engineering and inspection, . . . . .	562 55
	—————
	\$9,756 20

Year ending Dec. 1, 1906 : —

Construction, contract No. 83, . . . . .	\$7,482 39
Incidentals, . . . . .	496 13
Engineering and inspection, . . . . .	394 90
	—————
	8,373 42

Total, . . . . .	\$18,129 62
------------------	-------------

*Middlesex Fells Parkway.* — Engineering services have been furnished by this department for building wall along line between land of Jos. W. Chadwick and the parkway near Vista Street. The wall is 200 feet long, and the work of construction has been done by the reservation forces.

Surveys and construction plans have been made for a path in Fellsmere Park, Malden, along the northerly side of the

pond, from Murray Street entrance to Savin Street. The work of construction has been done by the reservation forces, was begun Oct. 15, 1906, and is nearly completed. Engineering services have been furnished by this department.

Taking and construction plans for the extension of Fells-way West from its present ending at junction with Forest Street to Elm Street have been prepared; also, plans and estimates for an electric railway location through the above-mentioned extension and through the Middlesex Fells Reservation.

*Mystic Valley Parkway.* — The work of building to sub-grade roadways along the Mystic River from High Street to Jerome Street, which was begun last year, has been completed. The total cost of this work has been as follows: —

Previously reported : —

Construction and incidentals, contract

No. 85, . . . . .	\$26,548 36
Engineering and inspection, . . . . .	1,406 22
	—————
	\$27,954 58

Year ending Dec. 1, 1906 : —

Construction, contract No. 85, . . . . .	\$1,120 97
Incidentals, . . . . .	27 07
Engineering and inspection, . . . . .	294 48
	—————
Total, . . . . .	1,442 52
	—————
	\$29,397 10

A detail plan for a wooden foot bridge over the Aberjona River near the Wedgemere Station, Winchester, has been prepared by this department. The work of building the bridge has been completed, having been done by and at the expense of private parties.

*Nahant Beach Parkway.* — Specifications have been prepared for paving with granite blocks on a concrete base the traffic road in the rear of the Nahant Beach Bath-house. On March 20, 1906, the following bids were received for the work: —

Patrick McGovern, Boston, . . . . .	\$19,168 00
Ruggles & Fallon, Boston, . . . . .	18,553 75
C. F. Dudley & Co., Reading, . . . . .	16,748 50

George A. Dillingham & Co., Boston, . . . . .	\$16,547 35
T. H. Gill & Co., Boston, . . . . .	15,939 50
H. P. Nawn, Roxbury, . . . . .	15,513 75
James Doherty, Boston, . . . . .	15,004 70
Coleman Brothers, Boston, . . . . .	14,610 75
Fred S. & A. D. Gore Corporation, Boston, . . . . .	14,498 75

The contract was awarded to Fred S. & A. D. Gore Corporation, the work was begun April 3, 1906, and completed May 23, 1906. Agreement was made with the Nahant & Lynn Street Railway Company, whereby the work of relaying on concrete base the paving in their track location was done by the same contractors, and a stated sum was paid by them to cover the cost of the work.

The total cost of the whole work has been as follows:—

Construction, contract No. 95, . . . . .	\$14,040 25
Incidentals, . . . . .	173 93
Engineering and inspection, . . . . .	340 10
<hr/>	
Total, . . . . .	\$14,554 28

Plans and estimates have been prepared for a bridle path, parallel to the Nahant Road, from a point just south of the bath-house to the end of the parkway taking in Nahant.

*Revere Beach Parkway.* — The roadways of the parkways, and especially of the section of this parkway from Eliot Circle, Revere, to Main Street, Everett, have been greatly damaged during the past year by the motor car traffic. Some protection for the surfaces of the roads was necessary, and after investigation it was decided to make experiments with a specially prepared coal tar known as "Tarvia."

This section of the parkway from Charles Eliot Circle to Main Street, excepting the portion of gravel roadway from the junction with Winthrop Avenue to Green Street, a total length of  $3\frac{1}{2}$  miles, was treated with this material, the work having been done by the reservation forces under the supervision of this department. The work was begun Aug. 25, 1906, and was completed Sept. 29, 1906. The following is a detailed account of the cost and the materials used:—



MYSTIC RIVER RESERVATION — Auburn Street Bridge.



Miles of road treated, . . . . .	3.44
Lineal feet of 26-foot roadway treated, . . . . .	3,260
Lineal feet of 36-foot roadway treated, . . . . .	14,870
Total number of square yards of roadway, . . . . .	67,434
Total cost, . . . . .	\$4,494.43
Average cost per square yard, . . . . .	.0666
Gallons "Tarvia" per square yard, . . . . .	.4032
Tons of stone screenings per square yard, . . . . .	.0147
Detailed cost per square yard of material and labor: —	
"Tarvia," . . . . .	.0262
Stone screenings, . . . . .	.0184
Preparing roadway, . . . . .	.0086
Applying "Tarvia," . . . . .	.0057
Applying screenings, . . . . .	.0062
Total cost of labor, per square yard, . . . . .	.0205
Rolling, . . . . .	.0047

The results have been very satisfactory up to the present time. A new, smooth surface has been formed over the bare stone, which seems to be holding well; the dust nuisance has been abated, and in times of wet weather the roadways are entirely free from mud. The only questions remaining as to the value of this treatment to overcome the new conditions caused by increased motor car traffic are as to its durability, and whether the frosts of this climate will have any bad effects upon it. The present winter will probably determine these questions.

*Winthrop Parkway.* — Construction plans have been prepared for the portion of this parkway from Charles Eliot Circle to Leverett Avenue, Revere; also topographical survey and map of the section known as Ocean Pier District from Charles Eliot Circle to the former location of Ocean Pier, an area of about 50 acres.

Repairs and additions have been made to the bulkhead near Charles Eliot Circle, to put it in condition to withstand the winter storms. The work, begun Sept. 25, 1906, and completed Oct. 15, 1906, was done by the reservation forces, and supervision and engineering was furnished by this department. The total cost of this work was \$857.96, exclusive of engineering and inspection.

## RESERVATIONS.

*Charles River Reservation.* — The work of building concrete and stone masonry dam and bridge at Boylston Street, Newton Upper Falls, under contract with Michael McDonough, which was begun Aug. 21, 1905, was completed on July 7, 1906, excepting the surfacing and finishing, which work it was necessary to postpone until the completion of work being done by the city of Newton in the East Branch of the Charles River, and work to be done by the Boston & Worcester Street Railway Company. Their work has been considerably delayed, and it was not possible to do the work of surfacing and finishing until late this fall. On Aug. 16, 1906, the following proposals were received for this work: —

John McCusker, Waltham, . . . . .	\$1,760 25
T. Stuart & Son Company, Newton, . . . . .	1,347 50
W. H. Mague Company, West Newton, . . . . .	1,339 70
David R. Courtney, Watertown, . . . . .	1,271 15

The proposal of D. R. Courtney was accepted, and the work begun on Sept. 26, 1906, but has been delayed, as above stated, and is still in progress.

The work of building a concrete masonry dam in the East Branch of the Charles River was added to the work under the contract with Michael McDonough for building bridge and dam in the Main Branch, and this work was done between April 1 and July 1, 1906, at a total cost of \$2,146.84, exclusive of engineering and inspection.

An agreement was made with the city of Newton, whereby the city authorities should construct the culvert bridge in Boylston Street for the East Branch of the Charles River, in accordance with plans approved by this Commission, the cost of the work, to a specified amount, to be paid to the city of Newton by this Commission out of the money appropriated for the Boylston Street Bridge and culverts. This work was begun July 2, 1906, and completed about Oct. 1, 1906. The bridge is a semicircular arch of 20-foot span, built of reinforced concrete masonry with granite rubble masonry faces.

The total cost of all the work done at this location has been as follows:—

Previously reported :—

Construction and incidentals, contract	
No. 92, . . . . .	\$18,720 30
Engineering and inspection, . . . . .	1,539 12
	—————
	\$20,259 42

Year ending Dec. 1, 1906 :—

Construction, contract No. 92, . . . . .	\$10,524 52
Culvert over East Branch of Charles	
River, . . . . .	9,574 38
Incidentals, . . . . .	447 18
Engineering and inspection, . . . . .	2,019 44
	—————
	22,565 52
Total, . . . . .	\$42,824 94
Construction, contract No. 92-A, . . . . .	\$523 83
Incidentals, . . . . .	46 60
Engineering and inspection, . . . . .	213 28
Total, . . . . .	783 71
Grand total, . . . . .	\$43,608 65

Construction plans and specifications for building to sub-grade the road along the Charles River, through the United States Arsenal grounds, from Arsenal Street to North Beacon Street, Watertown, have been prepared. This work includes the building of 330 lineal feet of river wall of granite ashler masonry, to match the wall constructed by the United States government at this location, and of which this wall is an extension.

On Aug. 6, 1906, the following bids were received for this work:—

George A. Dillingham & Co., Boston, . . . . .	\$24,582 50
Rowe & Perini, South Framingham, . . . . .	16,080 50
T. H. Gill & Co., Boston, . . . . .	17,862 50
T. Stuart & Son Company, Newton, . . . . .	16,330 00
Coleman Brothers, Boston, . . . . .	18,120 00
Broderick & Donovan, Jamaica Plain, . . . . .	13,180 00
Giovani Colantuoni & Frank Williams, Charlestown, . . . . .	11,995 00

On account of the evident misunderstanding of the plans and specifications and the improbability of the work being properly performed by the lowest bidders, it was deemed unadvisable to accept their proposal, and the contract for the work was awarded to Broderick & Donovan. The work was begun Aug. 20, 1906, and is now in progress. The estimated cost of this work to Dec. 1, 1906, has been as follows:—

Construction, contract No. 100, . . . . .	\$9,696 50
Incidentals, . . . . .	92 12
Engineering and inspection, . . . . .	829 14
<hr/>	
Total, . . . . .	\$10,617 76

*Lynn Shore Reservation.*—Surveys and plans for takings from the present ending of the reservation near Red Rock to Nahant Street, Lynn, have been made, and construction plans for this section are being prepared.

A portion of the sea wall near Red Rock has been reinforced by a boulder concrete riprap footing. The beach at this point had been lowered considerably by excessive washing during the storms of last winter, and, although no damage had been done to the wall, it was thought best to protect it so that further scouring might not undermine it. The total cost of this work has been \$1,419.23, exclusive of engineering and inspection.

*Middlesex Fells Reservation.*—Experiments with oil, for the prevention of the dust nuisance, have been made on Forest Street by Supt. Chas. P. Price of the reservation. The work was done under the general observation of this department, to determine its value for this work and its cost. An oil emulsion has been found to give the best results, and made the roadway surfaces practically dustless; but, on account of the lateness of the season when these experiments were begun, there was not sufficient time before the winter weather to give the treatment a satisfactory test, or to determine its durability or its cost to maintain in good condition. The appliances used in these tests were not entirely satisfactory, and therefore increased the cost somewhat. If the work should be continued to any extent in the future, it would be advis-

able to procure more satisfactory appliances for handling and mixing the materials. For the one application made in the experiments, the cost has been about  $3\frac{1}{2}$  cents per square yard. About 10,000 square yards of roadway surface were treated.

*Mystic River Reservation.* — The work of building to sub-grade roads along the river from Mystic Valley Parkway to Main Street, Medford, has been completed. The material has been obtained by dredging in the river, and as far as possible the channel has been made to conform to the dimensions which will be required when a permanent water level is established by dam and tide gates at Cradock Bridge. The total cost of this work to Dec. 1, 1906, has been as follows: —

Previously reported : —

Construction and incidentals, contract	
No. 85, . . . . .	\$13,828 36
Engineering and inspection, . . . . .	1,701 31
	—————
	\$15,529 67

Year ending Dec. 1, 1906 : —

Construction, contract No. 85, . . . . .	\$17,894 06
Incidentals, . . . . .	125 86
Engineering and inspection, . . . . .	1,833 73
	—————
	19,853 65
Total, . . . . .	—————
	\$35,383 32

Construction plans and specifications have been prepared for two reinforced concrete masonry bridges over the Mystic River, one near the Armory, Medford, and one at Auburn Street, West Medford. The bridge near the Armory is a segmental arch of 60-foot span and 60 feet in width. It is constructed entirely of concrete, the arch ring, quoins, parapet and copings being molded block concrete, and the abutments, wing walls and spandrels being monolithic. The molded blocks were made considerably in advance of the work of building the bridge, so that they might be allowed to become thoroughly seasoned before being placed in the work. They were of various shapes and dimensions, were made of concrete mixed in the proportion of 1 part Port-

land cement, 2 parts sand and  $4\frac{1}{2}$  parts broken stone, with a facing on all showing surfaces of 1 inch of mortar, composed of 1 part Portland cement and 3 parts crushed-stone screenings. After the blocks had seasoned for from forty to sixty days, all showing surfaces were bush-hammered, and they were then ready to be placed in the work. For the faces of the abutments and the soffit of the arch a facing 1 inch in thickness, composed of 1 part Portland cement and 2 parts sand, was used; and after the forms were removed the surfaces were wet with a thin mortar and rubbed with grind-stone until all marks were removed, and the surface showed a smooth, even appearance. For the surfaces of the wing walls and spandrels a facing  $1\frac{1}{2}$  inches in thickness, composed of 1 part Portland cement, 1 part sand and 2 parts bank gravel screenings, was used; and after the work had been in place not less than thirty days, the surfaces were picked or pointed so as to expose the small stone and give a rough appearance. The intention of the above-described treatments is to produce a marked contrast between the surface of the monolithic work and that of the trimmings.

The bridge at Auburn Street is a segmental arch of 60-foot span and 70 feet in width and it is also built entirely of concrete. The only portion of this work in which the molded block concrete with the bush-hammered face is used is the arch ring and the coping of the parapet walls. The surfaces of the other portions of the work are gravel-mortar faced and picked or pointed.

The designs of the two bridges are entirely different. The first-described one, which carries the reservation drive, only, over the river, has its faces and wing walls parallel to the line of the drive with a light balcony on each face at the crown of the arch. The other, which is constructed at the junction of the reservation drive, Auburn Street, and the new channel of the river, is designed to carry both the reservation drive and Auburn Street over the river, and is built with large circular bastions at each corner of the bridge, with the wing walls curving outward from these bastions to allow the two roads to diverge immediately after crossing the bridge.

On June 4, 1906, the following bids were received for building the bridge near the Armory:—

Fred S. & A. D. Gore Corporation, Boston, . . . . .	\$49,126	35
Falvey & Kelley, Dorchester, . . . . .	45,784	00
William H. Ward, Lowell, . . . . .	41,435	00
Richmond F. Hudson, Melrose, . . . . .	39,567	75
Woodbury & Leighton Company, Boston, . . . . .	38,128	90
Ruggles & Fallon, Boston, . . . . .	36,556	53
T. H. Gill & Co., Boston, . . . . .	34,741	75
M. McDonough, Swampscott, . . . . .	34,132	00
Coleman Brothers, Boston, . . . . .	28,821	20

The contract was awarded to Coleman Brothers, the work was begun on July 6, 1906, and is nearly completed, except the filling of the approaches. The work of making the molded concrete blocks was also done by Coleman Brothers, was begun May 7, 1906, and is completed except a small portion of the dressing. The total cost of this work to Dec. 1, 1906, has been as follows:—

Construction, contract No. 98, . . . . .	\$20,750	43
Concrete blocks, . . . . .	1,813	50
Steel reinforcing bars, . . . . .	1,051	63
Incidentals, . . . . .	538	79
Engineering and inspection, . . . . .	1,820	57
<hr/>		
Total, . . . . .	\$25,974	92

On July 23, 1906, the following bids were received for the work of building the Auburn Street Bridge:—

Bruno, Salomone & Petitti, Boston, . . . . .	\$36,075	00
T. H. Gill & Co., Boston, . . . . .	23,930	00
Coleman Brothers, Boston, . . . . .	23,462	50
Rowe & Perini, South Framingham, . . . . .	20,823	00

The contract was awarded to Rowe & Perini, the work was begun July 30, 1906, and is now in progress and nearly completed. This contract includes the excavating of the new channel of the river, about 700 feet in length and about 135 feet in width at the surface of the marsh. The total cost of this work to Dec. 1, 1906, has been as follows:—

Construction, contract No. 99, . . . . .	\$22,327 00
Concrete blocks, . . . . .	312 00
Steel reinforcing bars, . . . . .	1,608 52
Incidentals, . . . . .	507 82
Engineering and inspection, . . . . .	1,555 99
 Total, . . . . .	 \$26,311 33

Construction plans are being prepared for a dam and tide gates in the Mystic River near Cradock Bridge, to maintain the water in the river above this point at a permanent elevation and exclude tide water.

*Nantasket Beach Reservation.* — Engineering services and supervision have been furnished for drainage and grading work which is being done by the reservation forces. The work was begun Nov. 16, 1906, and is now in progress.

*Quincy Shore Reservation.* — The work of building to subgrade the roadway and shore slopes from Atlantic Street to National Sailors' Home, Quincy, which is under contract with Newell & Snowling Construction Company, and which was begun Sept. 5, 1905, is still in progress, and will probably be completed before Dec. 31, 1906. About 175,000 cubic yards of filling material has been required for the work, about 70,000 cubic yards of this amount being obtained from borrow pits, and the balance, 105,000 cubic yards, being obtained from Quincy Bay by excavating with a steam scraper along the shore. The total cost of this work to Dec. 1, 1906, has been as follows: —

Previously reported : —	
Construction and incidentals, contract	
No. 93, . . . . .	\$7,977 41
Engineering and inspection, . . . . .	880 34
	 \$8,857 75

Year ending Dec. 1, 1906 : —	
Construction, contract No. 93, . . . . .	\$58,226 53
Incidentals, . . . . .	321 10
Engineering and inspection, . . . . .	3,496 33
	 62,043 96
Total, . . . . .	 \$70,901 71



MYSTIC RIVER RESERVATION.—Armory Bridge.



Incidental to the construction of the drive along Quincy Shore, it was necessary to construct a bridge over Sachem Brook and a culvert near the southerly end of the work. The bridge over Sachem Brook is of 20-foot span, and 52 feet 6 inches in width, and is constructed of reinforced concrete. The culvert is 6 by 6 feet, 78 feet 6 inches in length, and is also constructed of reinforced concrete.

On March 19, 1906, the following bids were received for building the above-described bridge and culvert: —

John Cashman, Quincy, . . . . .	\$14,445 00
J. J. Sullivan, Boston, . . . . .	13,766 40
Healy Sewer Machine and Construction Company, Boston, . . . . .	13,500 20
Falvey & Kelley, Dorchester, . . . . .	13,260 00
Marr Brothers, Wollaston, . . . . .	11,908 90
Fred S. & A. D. Gore Corporation, Boston, . . . . .	11,825 20
John T. Scully Foundation and Transportation Company, Cambridge, . . . . .	11,571 00
Andrew D. Fuller Company, Boston, . . . . .	11,438 00
T. H. Gill & Co., Boston, . . . . .	10,698 00
George H. Cavanagh, Boston, . . . . .	10,606 00
William Shea & Sons, West Quincy, . . . . .	10,322 00
David J. Sheehan & Co., Lynn, . . . . .	10,134 50
N. S. Brock, Brighton, . . . . .	9,134 00
Coleman Brothers, Boston, . . . . .	8,409 36
Ruggles & Fallon, Boston, . . . . .	7,759 69

The contract was awarded to Ruggles & Fallon, the work was begun April 3, 1906, and completed Sept. 30, 1906. The total estimated cost of this work has been as follows: —

Construction, contract No. 94, . . . . .	\$7,648 09
Incidentals, . . . . .	108 99
Engineering and inspection, . . . . .	770 61
<hr/>	
Total, . . . . .	\$8,527 69

The channel of Sachem Brook from the end of the existing channel dredged by the Harbor and Land Commission up to the end of the new bridge, a distance of about 200 feet, and the channel through the new bridge, has been dredged

and excavated to a depth of 3 feet below mean low tide. The total cost of this work has been \$1,132.20, exclusive of engineering and inspection.

*Revere Beach Reservation.* — The work of grading, surfacing and shore construction from Revere Street to Northern Circle, Revere, under contract with E. W. Everson & Co., which was begun Oct. 17, 1904, was completed July 31, 1906, and opened to public travel at this time. The total cost of this work has been as follows: —

Previously reported :—

Construction and incidentals, contract No. 83, . . . . .	\$92,400 31
Engineering and inspection, . . . . .	3,629 25
	—————
	\$96,029 56
Year ending Dec. 1, 1906 :—	
Construction, contract No. 83, . . . . .	\$35,201 66
Incidentals, . . . . .	239 07
Engineering and inspection, . . . . .	2,715 67
	—————
	38,156 40
Total, . . . . .	—————
	\$134,185 96

The entrances of Beaver Street and Bath Street into the reservation have been closed, and the edge-stone and granolithic walks have been constructed across the ends of these two streets.

The portion of the reservation drive near and around Charles Eliot Circle has been repaired and resurfaced with a tar macadam. This part of the drive had settled considerably since its construction, and it was necessary to raise the edge-stone, gutters and roadway to give sufficient crown to take care of surface drainage. The work has been done by the reservation forces, and engineering services and supervision have been furnished by this department.

## GENERAL.

An inspection of the bridges under the care and control of the Commission has been made twice during the year, in May and November, and reports made to the Secretary of

their condition. Supervision has been furnished by this department for all necessary repairs.

Thirty-two plans for record have been prepared, for most of which surveys were made, and 53 duplicate copies of record plans have been made.

In closing, I desire to call attention to the necessity for further experiments, and for the adoption of the best methods of treating the surfaces of the roadways to protect them against the damage caused by motor car travel.

The following tables are appended to this report:—

TABLE 1. Lengths of parkways.

TABLE 2. Summary of plan work.

TABLE 3. Summary of vouchers.

TABLE 4. Summary of cost of engineering.

TABLE 5. Prices for items of construction.

Respectfully submitted,

JOHN R. RABLIN,

*Engineer.*

DEC. 1, 1906.

TABLE 1.—*Length of Parkways, corrected to Dec. 1, 1906.*

DESCRIPTION.	Constructed (Miles)	Under Construction (Miles).	Remainder (Miles).	Totals (Miles).
Blue Hills: Mattapan Square to Harland Street Entrance of Blue Hills Reservation, Boston and Milton, .	2.27	-	-	2.27
Fresh Pond: Mount Auburn Street to Huron Avenue, Cambridge, .	.52	-	-	.52
Furnace Brook: Merrymount Park to Blue Hills Reservation, Quincy,	1.49	.84	.90	3.23
Lynn Fells Parkway: Middlesex Fells Reservation to Green Street, Stoneham and Melrose, .	-	.98	.06	1.04
Lynnway: Revere Beach Reservation to northerly side of Saugus River, Revere and Lynn, .	.69	-	-	.69
Middlesex Fells: Broadway to Middlesex Fells Reservation, Somerville, Medford and Malden, .	4.60	-	.51	5.11
Mystic Valley: High Street to Middlesex Fells Reservation, Medford and Winchester, .	2.90	-	-	2.90
Nahant Beach: Lynn Line at Washington Street to Spring Road, Nahant, .	.25	-	1.98	2.23
Neponset River: junction of River Street and Damon Street to Blue Hills Reservation, .	.53	-	1.71	2.24
Revere Beach: Revere Beach Reservation to Middlesex Fells Parkway and Mystic River Reservation, Revere, Chelsea, Everett and Medford, .	5.24	-	-	5.24
Winthrop Parkway: Charles Eliot Circle to Leverett Avenue, Revere, .	-	-	.42	.42
Totals, . . . . .	18.49	1.82	5.58	25.89

TABLE 2.—*Summary of Maps and Plans prepared during the Year ending Dec. 1, 1906, omitting Blue and Other Prints.*

	Abandonments and Conveyances.	Construction.	Copies.	Entrances.	General.	Land and Settlement.	Restriction.	Takings, including Conveyances to Commonwealth.	Topographic.	Working Plans (Office).	Totals.
<i>Parkways.</i>											
Blue Hills, . . . .	-	1	-	-	-	-	-	-	-	1	2
Fresh Pond, . . . .	-	3	-	-	-	-	-	2	-	-	5
Furnace Brook, . . . .	-	9	-	2	1	-	-	2	-	8	22
Lynn Fells, . . . .	2	17	-	-	1	2	3	6	2	19	52
Middlesex Fells, . . . .	-	12	1	2	-	2	-	6	-	12	35
Mystic Valley, . . . .	2	2	-	1	-	-	-	1	-	-	6
Nahant Beach, . . . .	2	2	-	-	-	-	-	-	-	-	4
Neponset River, . . . .	2	-	-	-	-	1	1	3	-	1	8
Revere Beach, . . . .	2	-	-	2	-	2	3	-	-	-	9
Winthrop Shore, . . . .	-	2	-	-	-	-	-	2	-	4	8
Totals, . . . .	10	48	1	7	2	7	7	22	2	45	151
<i>Reservations.</i>											
Blue Hills, . . . .	1	-	-	-	-	2	-	1	-	1	5
Charles River, . . . .	14	17	-	-	3	2	-	6	-	21	63
Lynn Shore, . . . .	-	4	1	-	-	1	2	2	-	2	12
Middlesex Fells, . . . .	1	6	-	-	1	-	-	-	-	7	15
Mystic River, . . . .	1	46	-	-	8	1	-	5	-	2	63
Nantasket Beach, . . . .	-	3	-	-	-	-	-	1	-	-	4
Neponset River, . . . .	8	-	-	-	-	1	-	4	-	-	13
Quincy Shore, . . . .	-	4	-	-	1	-	-	2	-	16	23
Revere Beach, . . . .	5	3	2	-	1	3	-	3	1	3	21
Stony Brook, . . . .	-	-	-	-	-	1	-	1	-	-	2
Winthrop Shore, . . . .	2	-	-	-	-	-	-	6	-	-	8
Totals, . . . .	32	83	3	-	14	11	2	31	1	52	229
Grand totals, . . . .	42	131	4	7	16	18	9	53	3	97	380

TABLE 3.—Summary of Vouchers of the Engineering Department, including, under Construction, the Entire Estimated Value of Work performed during the Year ending Dec. 1, 1906.

CONSTRUCTION.	INCIDENTAL TO ENGINEERING DEPARTMENT.						TOTALS.
	EQUIPMENT.	OPERATING EXPENSES.	REPAIRS.	SUPPLIES.	TRAVEL.	INCIDENTAL EXPENSES.	
GENERAL EQUIPMENT.							\$126 12
GENERAL OPERATING EXPENSES.							2,367 66
Blue Hills, Parkways.							
Blue Hills Roads.							
Charles River Speedway.							
Fresh Pond.							
Furnace Brook.							
Lynn Falls.							
Lynnway.							
Middlesex Fells.							
Middlesex Fells Roads.							
Mystic Valley.							
Nahant Beach.							
Neponset River.							
Revere Beach.							
Winthrop.							
PARKWAY TOTALS.							
Beaver Brook.							
Blue Hills.							
Boylston Street Bridge (Charles River).							
Charles River.							
Hemlock Gorge.							



TABLE 4.—*Summary of Engineering and Surveying.*

Parkways.		Reservations.		Totals.	
Blue Hills,	-	-	-	\$35 46	
Blue Hills Roads,	-	-	-	163 07	
Charles River Speedway,	\$2 00	-	-	25 04	
Fresh Pond,	-	-	-	118 33	
Furnace Brook,	-	\$8 65	\$3,894 37	5,259 69	
Lynn Fells,	52 90	38 05	444 32	2,051 73	
Lynway,	-	-	-	570 80	
Middlesex Fells,	1 00	-	-	2,288 76	
Middlesex Fells Roads,	-	-	-	56 55	
Myrt Valley,	1 80	-	294 48	487 23	
Nahant Beach,	14 70	-	340 10	564 30	
Neponset River,	12 00	66 00	6 00	217 71	
Revere Beach,	12 50	107 00	97 67	754 68	
Winthrop,	-	-	-	403 64	
Parkway totals,	-	-	-	403 64	
Beaver Brook,	-	-	-	\$102 80	\$106 72
Blue Hills,	\$6 30	-	\$10 70	55 72	
Boylston Street Bridge (Charles River),	-	\$2,282 72	136 05	2 40	2,371 17
				\$94 30	\$12,996 39

220 25	\$82 14	848 36	21 61	863 53	89 90	1 00	101 93	-	\$153 57	-	44 90	2,538 35	
-	-	-	-	1 75	3 50	-	-	-	-	-	50 15		
-	-	3 50	10 50	-	-	3 60	-	-	-	-	17 50		
222 10	23 40	4 92	240 28	196 09	8 10	89 70	70 15	\$18 20	435 63	-	1,108 57		
2 30	142 70	-	1 75	-	23 68	-	7 00	-	-	-	173 03		
-	-	5,210 29	-	2,512 58	40 80	-	7 00	-	86 03	-	7,856 70		
42 10	13 50	-	-	7 42	5 25	-	23 58	-	-	10 50	-	102 35	
-	4 40	4,266 94	-	196 25	4 50	2 80	8 75	-	-	23 30	-	4,506 94	
17 30	11 30	2,715 67	133 15	116 51	4 05	31 20	11 00	23 10	174 22	-	3,257 50		
1 80	-	-	-	-	3 50	-	-	-	3 60	-	8 90		
-	-	-	5 84	-	8 75	-	-	-	-	-	14 59		
2 70	-	-	-	-	16 92	-	14 00	-	38 00	-	71 62		
\$314 85	\$227 44	\$15,278 40	\$436 83	\$4,104 368	\$220 27	\$132 00	\$261 39	\$41 30	\$932 45	\$147 70	\$22,045 81		
-	-	-	\$116 74	\$30 92	-	-	\$7 00	-	\$5 80	-	\$180 46		
-	-	-	\$111 18	-	-	-	-	-	-	-	\$11 18		
-	-	\$181 20	-	-	-	-	-	-	-	-	181 20		
-	-	\$35 20	10 30	-	-	-	-	-	-	-	46 10		
-	-	\$216 40	\$22 08	-	-	-	-	-	-	-	\$238 48		
-	-	-	-	\$6 00	-	-	-	-	-	-	\$6 00		
-	-	-	13 25	-	-	-	-	-	-	-	13 25		
-	-	-	\$19 25	-	-	\$1,633 76	-	-	-	-	\$19 25		
-	-	-	-	\$1,840 14	\$296 68	\$635 53	\$137 05	\$2,125 67	\$242 00	\$37,014 15	1,533 76		
\$411 75	\$447 14	\$21,134 04	\$1,470 78	\$8,273 37	\$1,840 14	\$296 68	\$635 53	\$137 05	\$2,125 67	\$242 00	\$37,014 15		

### Expense Fund.

Revere Beach Parkway, -  
Lynn Shore Reservation,  
Revere Beach Reservation

### Expense fund totals, .

### Band Concert Fund.

Nahant Beach Parkway, . . . . .  
Revere Beach Reservation, . . . . .

Band concert fund totals, . . . . . \$19.25

TABLE 5.—*Prices paid for Principal Items of Construction.*

<i>Paving.</i>	
Granite (square yard),	15.00
Granite-concrete base (square yard),	15.00
Spruce lumber in place (1,000 feet B. M.),	30.00
<i>Masonry.</i>	
Brick (cubic yard),	3.15
First-class stone (cubic yard),	40.00
Quarry-faced ashler (cubic yard),	12.00
Second-class stone (cubic yard),	12.00
Rubble (cubic yard),	6.00
Concrete (cubic yard),	6.50
Concrete (cubic yard),	6.50
Stone coping (lineal foot),	6.00
Artificial stone coping (lineal foot),	6.00
Moulded block concrete (cubic yard),	25.00
Concrete catch-basins (each),	25.00
<i>Spruce Piles (in Place).</i>	
Length 20 feet,	2.20
Length 20 to 25 feet inclusive,	3.15
Length 30 to 35 feet inclusive,	4.50
<i>Surfacing.</i>	
Gravel roadway (square yard),	25
Broken stone roadway (square yard),	25
Gravel walk (square yard),	20
Loam (cubic yard),	50
Loam, including furnishing (cubic yard),	125
Surfacing gravel (cubic yard),	115
Granolithic sidewalk (square yard),	250

## FINANCIAL STATEMENT.

DEC. 1, 1905, TO DEC. 1, 1906.

Metropolitan Parks Loan Fund, . . . . .	8,440,000 00
Receipts from bath-house, sales, etc., . . . . .	198,334 01
	<hr/>

\$8,638,334 01

*Expenditures.*

Blue Hills Reservation:—	
Land, . . . . .	\$1,917 00
Construction, labor and materials, . . . . .	3,748 14
Engineering:—	
Pay rolls, . . . . .	\$65 02
Expenses, . . . . .	5 30
	<hr/>
70 32	
Landscape Architects:—	
Services, . . . . .	\$202 86
Expenses, . . . . .	11 29
	<hr/>
214 15	
Legal, . . . . .	38 28
Land experts, . . . . .	32 50
	<hr/>
	\$6,020 39
Middlesex Fells Reservation:—	
Construction, labor and materials, . . . . .	\$29,487 47
Engineering:—	
Pay rolls, . . . . .	\$241 46
Expenses, . . . . .	7 25
	<hr/>
248 71	
Landscape Architects:—	
Services, . . . . .	\$2,487 10
Expenses, . . . . .	320 97
	<hr/>
2,808 07	
	32,544 25
Revere Beach Reservation:—	
Land, . . . . .	\$200 00
Construction:—	
Contract, Everson & Co., . . . . .	\$47,671 04
Labor and materials, . . . . .	64 00
	<hr/>
47,735 04	
Engineering:—	
Pay rolls, . . . . .	\$3,615 90
Expenses, . . . . .	254 58
	<hr/>
3,870 48	
Landscape Architects:—	
Services, . . . . .	\$70 28
Expenses, . . . . .	5 19
	<hr/>
75 47	
Legal, . . . . .	1 00
Park settees, . . . . .	525 00
Report and plans, power house, . . . . .	450 00
Land experts, . . . . .	18 00
Advertising, . . . . .	4 65
	<hr/>
	52,879 64
Amounts carried forward, . . . . .	\$91,444 28 \$8,638,334 01

<i>Amounts brought forward,</i>	.. . . .	\$91,444 28	\$8,638,334 01
<b>Stony Brook Reservation:—</b>			
<b>Engineering:—</b>			
Pay rolls,	.. . . .	\$9 30	
Expenses,	.. . . .	1 00	
	-----	\$10 30	
	-----	10 30	
<b>Beaver Brook Reservation:—</b>			
Construction, labor and materials,	.. . . .	\$238 00	
<b>Engineering:—</b>			
Pay rolls,	.. . . .	\$104 55	
Expenses,	.. . . .	1 40	
	-----	105 95	
<b>Landscape Architects:—</b>			
Services,	.. . . .	\$194 50	
Expenses,	.. . . .	8 41	
	-----	202 91	
	-----	546 86	
<b>Hemlock Gorge Reservation:—</b>			
<b>Engineering:—</b>			
Pay rolls,	.. . . .	\$50 15	
Expenses,	.. . . .	1 35	
	-----	\$51 50	
	-----	51 50	
<b>Charles River Reservation:—</b>			
Land,	.. . . .	\$1,100 00	
<b>Construction:—</b>			
Contract, Broderick & Donovan,	.. . . .	\$3,536 00	
Labor and materials,	.. . . .	485 33	
	-----	4,021 33	
<b>Engineering:—</b>			
Pay rolls,	.. . . .	\$2,367 78	
Expenses,	.. . . .	159 18	
	-----	2,526 96	
<b>Landscape Architects:—</b>			
Services,	.. . . .	\$1,346 65	
Expenses,	.. . . .	47 90	
	-----	1,394 55	
Legal,	.. . . .	8 50	
Land experts,	.. . . .	370 00	
Moving shed,	.. . . .	200 00	
Advertising,	.. . . .	121 41	
Miscellaneous,	.. . . .	90 85	
	-----	9,833 60	
<b>Neponset River Reservation:—</b>			
Land,	.. . . .	\$334 10	
<b>Engineering:—</b>			
Pay rolls,	.. . . .	\$187 45	
Expenses,	.. . . .	4 95	
	-----	192 40	
	-----	526 50	
<b>Mystic River Reservation:—</b>			
Land,	.. . . .	\$2,801 34	
<b>Construction:—</b>			
<b>Contracts:—</b>			
Coleman Bros.,	.. . . .	\$32,678 75	
Rowe & Perini,	.. . . .	14,774 78	
Concrete blocks,	.. . . .	2,125 50	
Expanded Metal and Corru- gated Bar Co.,	.. . . .	2,660 15	
	-----	52,239 18	
<i>Amounts carried forward,</i>	.. . . .	\$55,040 52	\$8,638,334 01

<i>Amounts brought forward,</i>	•	•	•	•	•	\$55,040 52	\$102,413 04	\$8,638,334 01
<b>Engineering:—</b>								
Pay rolls,	•	•	•	•	•	\$7,393 86		
Expenses,	•	•	•	•	•	762 26		
						—————		
						8,156 12		
<b>Landscape Architects:—</b>								
Services,	•	•	•	•	•	\$300 88		
Expenses,	•	•	•	•	•	1 75		
						—————		
						302 63		
Land experts,	•	•	•	•	•	30 00		
One-half cost report State Board of Health,	•	•	•	•	•	1,692 47		
Wheelwright & Haven, architects,	•	•	•	•	•	535 53		
Advertising,	•	•	•	•	•	220 10		
Miscellaneous,	•	•	•	•	•	52 50		
						—————		
						66,029 87		
<b>Lynn Shore Reservation:—</b>								
Land,	•	•	•	•	•	•	\$96,849 35	
<b>Construction:—</b>								
Contract, Alpheus B. Robbins,	•	•	•	•	•	\$923 53		
Labor and materials,	•	•	•	•	•	479 60		
						—————		
						1,403 13		
<b>Engineering:—</b>								
Pay rolls,	•	•	•	•	•	\$1,220 76		
Expenses,	•	•	•	•	•	85 66		
						—————		
						1,306 42		
<b>Landscape Architects:—</b>								
Services,	•	•	•	•	•	\$52 26		
Expenses,	•	•	•	•	•	7 81		
						—————		
						60 07		
Land experts,	•	•	•	•	•	350 00		
City of Lynn, changing sewer,	•	•	•	•	•	593 32		
Miscellaneous,	•	•	•	•	•	5 00		
						—————		
						100,567 29		
<b>Quincy Shore Reservation:—</b>								
Land,	•	•	•	•	•	•	\$660 00	
<b>Construction:—</b>								
<b>Contracts:—</b>								
Newell & Snow-								
ling Construc-								
tion Co.,	•	•	•	•	•	\$50,626 28		
Ruggles & Fallon,	•	•	•	•	•	7,400 88		
						—————		
						\$58,027 16		
Labor and materials,	•	•	•	•	•	1,132 20		
						—————		
						59,159 36		
<b>Engineering:—</b>								
Pay rolls,	•	•	•	•	•	\$4,476 01		
Expenses,	•	•	•	•	•	475 03		
						—————		
						4,951 04		
Land experts,	•	•	•	•	•	90 00		
Advertising,	•	•	•	•	•	108 06		
						—————		
						64,968 46		
<b>Winthrop Shore Reservation:—</b>								
Construction, labor and materials,	•	•	•	•	•	•	\$58 00	
<b>Engineering:—</b>								
Pay rolls,	•	•	•	•	•	\$78 82		
Expenses,	•	•	•	•	•	6 00		
						—————		
						84 82		
Legal,	•	•	•	•	•	105 00		
						—————		
						247 82		
<i>Amounts carried forward,</i>	•	•	•	•	•	•	\$334,226 48	\$8,638,334 01

<i>Amounts brought forward,</i>		\$334,226 48	\$8,638,334 01
King's Beach Reservation:—			
Land, . . . . .		\$450 00	
Engineering:—			
Pay rolls, . . . . .	\$17 50		
Expenses, . . . . .	1 35		
	18 85		
		468 85	
Wellington Bridge:—			
Engineering:—			
Pay rolls, . . . . .	\$14 59		
Expenses, . . . . .	25		
	\$14 84		
Installing motor, . . . . .	209 61		
Paint, . . . . .	123 64		
Telephones, . . . . .	16 45		
		364 54	
Boylston Street Bridge:—			
Construction:—			
Contract, Michael McDonough, . . . . .	\$21,432 14		
Labor and materials, . . . . .	889 15		
	22,321 29		
Engineering:—			
Pay rolls, . . . . .	\$2,745 04		
Expenses, . . . . .	217 91		
	2,962 95		
Contribution to city of Newton, east branch culvert, . . . . .	9,000 00		
		34,284 24	
General expense:—			
Engineering:—			
Pay rolls, . . . . .	\$856 99		
Expenses, . . . . .	347 73		
	\$1,204 72		
Legal, . . . . .	3,486 40		
Claims, . . . . .	200 00		
Advertising, Apportionment Commission, . . . . .	25 85		
		4,916 97	
Amounts charged to Dec. 1, 1905, . . . . .	\$7,973,830 83		
Less Winthrop Parkway expenditures for 1904 and 1905, transferred to Metropolitan Parks Loan, Series II, . . . . .	15,977 30		
		7,957,853 53	
Balance in hands of State Treasurer, . . . . .		8,332,114 61	
		\$306,219 40	

### METROPOLITAN PARKS LOAN FUND, SERIES II.

Metropolitan Parks Loan Fund, Series II, . . . . .		\$4,785,000 00
Receipts from sales, etc., . . . . .		29,907 41
		\$4,814,907 41

### *Expenditures.*

Blue Hills Parkway:—		
Construction, labor and material, . . . . .	\$30 00	
Engineering:—		
Pay rolls, . . . . .	\$38 96	
Expenses, . . . . .	9 00	
	47 96	
		\$77 96
Middlesex Fells Parkway:—		
Construction, labor and material, . . . . .	\$469 00	
Land, . . . . .	16,895 62	
<i>Amounts carried forward,</i>	\$17,364 62	\$77 96 \$4,814,907 41

<i>Amounts brought forward,</i>	•	•	•	•	•	\$17,364 62	\$77 96	\$4,814,907 41
<b>Engineering:—</b>								
Pay rolls,	•	•	•	•	•	\$2,282 64		
Expenses,	•	•	•	•	•	28 96		
						—	2,311 60	
<b>Landscape Architects:—</b>								
Services,	•	•	•	•	•	\$258 26		
Expenses,	•	•	•	•	•	17 18		
						—	275 44	
Legal,	•	•	•	•	•	•	80 06	
Land experts,	•	•	•	•	•	•	250 00	
Advertising,	•	•	•	•	•	•	33 00	
Reports of hearings,	•	•	•	•	•	•	25 75	
						—	20,340 47	
<b>Mystic Valley Parkway:—</b>								
Land,	•	•	•	•	•	•	\$1,002 51	
<b>Construction:—</b>								
Contract, Coleman Bros.,	•	•	•	•	•	\$2,067 15		
Labor and material,	•	•	•	•	•	3,779 81		
						—	5,846 96	
<b>Engineering:—</b>								
Pay rolls,	•	•	•	•	•	\$673 58		
Expenses,	•	•	•	•	•	36 11		
						—	709 69	
<b>Landscape Architects:—</b>								
Services,	•	•	•	•	•	\$69 24		
Expenses,	•	•	•	•	•	3 95		
						—	73 19	
<b>Revere Beach Parkway:—</b>								
Construction, labor and materials,	•	•	•	•	•	•	\$5,546 94	
<b>Engineering:—</b>								
Pay rolls,	•	•	•	•	•	\$655 35		
Expenses,	•	•	•	•	•	47 00		
						—	702 35	
<b>Landscape Architects:—</b>								
Services,	•	•	•	•	•	\$92 38		
Expenses,	•	•	•	•	•	1 40		
						—	93 78	
Legal,	•	•	•	•	•	•	26 65	
						—	6,369 72	
<b>Neponset River Parkway:—</b>								
Land,	•	•	•	•	•	•	\$37,410 15	
<b>Engineering:—</b>								
Pay rolls,	•	•	•	•	•	\$240 31		
Expenses,	•	•	•	•	•	4 65		
						—	244 96	
Legal,	•	•	•	•	•	•	35 80	
Land experts,	•	•	•	•	•	•	1,175 00	
						—	33,865 91	
<b>Fresh Pond Parkway:—</b>								
<b>Construction:—</b>								
<b>Contracts:—</b>								
W. A. & H. A. Root,	•	•	•	•	•	\$958 28		
John Evans & Co.,	•	•	•	•	•	415 00		
Brock Bros.,	•	•	•	•	•	90 00		
Tablets,	•	•	•	•	•	50 00		
						—	\$1,513 28	
<b>Engineering:—</b>								
Pay rolls,	•	•	•	•	•	\$172 31		
Expenses,	•	•	•	•	•	11 00		
						—	183 31	
<i>Amounts carried forward,</i>	•	•	•	•	•	•	\$1,696 59	\$73,286 41 \$4,814,907 41

*Amounts brought forward, . . . . .* \$1,696 59 \$73,286 41 \$4,814,907 41

Landscape Architects:—

Services, . . . . .	\$88 98
Expenses, . . . . .	1 08
	90 06

1,786 65

Furnace Brook Parkway:—

Land, . . . . .	\$1,456 00
-----------------	------------

Construction:—

Contracts:—

John Cashman, . . . . .	\$15,729 05
Hugh Nawn Cons. Co., . . . . .	25,595 38
N. Y., N. H. & H. R.R. Co. (bridge), . . . . .	8,674 87
	\$49,999 30
Labor and materials, . . . . .	11,621 42
	61,620 72

Engineering:—

Pay rolls, . . . . .	\$4,994 94
Expenses, . . . . .	455 34
	5,450 28

Landscape Architects:—

Services, . . . . .	\$335 74
Expenses, . . . . .	20 07
	355 81

Legal, . . . . .	6 28
Land experts, . . . . .	25 00
Advertising, . . . . .	137 48
Report of hearing, . . . . .	23 75
	69,075 32

Nahant Beach Parkway:—

Construction:—

Contract, Fred S. & A. D. Gore Corp., . . . . .	\$14,178 85
Labor and materials, . . . . .	2,173 49
	\$16,352 34

Engineering:—

Pay rolls, . . . . .	\$582 45
Expenses, . . . . .	58 51
	640 96
	16,993 30

Lynn Fells Parkway:—

Land, . . . . .	\$31,137 96
-----------------	-------------

Construction:—

Contract, T. Stuart & Son, . . . . .	\$3,019 62
Labor and materials, . . . . .	2,606 79
	5,626 41

Engineering:—

Pay rolls, . . . . .	\$1,845 77
Expenses, . . . . .	207 21
	2,052 98

Landscape Architects:—

Services, . . . . .	\$10 86
Expenses, . . . . .	4 72
	15 58

Legal, . . . . .	618 72
Claims, . . . . .	35 00
Advertising, . . . . .	125 20
	39,611 85

*Amounts carried forward, . . . . .* \$200,753 53 \$4,814,907 41

<i>Amounts brought forward,</i>	.. . . . .	\$200,753 53	\$4,814,907 41
<b>Winthrop Parkway:—</b>			
Land, . . . . .		<b>\$1,472 50</b>	
Construction, labor, . . . . .		857 96	
Engineering:—			
Pay rolls, . . . . .		\$584 39	
Expenses, . . . . .		34 98	
	—————		
		619 37	
<b>Landscape Architects:—</b>			
Services, . . . . .		\$60 70	
Expenses, . . . . .		1 92	
	—————		
		62 62	
Legal, . . . . .		441 58	
Land experts, . . . . .		10 00	
	—————		
		3,464 03	
<b>Lynnway:—</b>			
<b>Construction:—</b>			
Contract, E. W. Everson & Co., . . . . .		\$9,495 38	
Labor and materials, . . . . .		597 56	
	—————		
		\$10,092 94	
<b>Engineering:—</b>			
Pay rolls, . . . . .		\$691 05	
Expenses, . . . . .		329 47	
	—————		
		1,020 52	
<b>Charles River Speedway:—</b>			
<b>Engineering:—</b>			
Pay rolls, . . . . .		\$27 96	
Expenses, . . . . .		50	
	—————		
		\$28 46	
	—————		
		28 46	
<b>Blue Hills Roads:—</b>			
<b>Engineering:—</b>			
Pay rolls, . . . . .		\$237 17	
Expenses, . . . . .		20	
	—————		
		\$237 37	
	—————		
		237 37	
<b>Middlesex Fells Road:—</b>			
Construction, labor and material, . . . . .		\$5,210 78	
<b>Engineering:—</b>			
Pay rolls, . . . . .		\$88 38	
Expenses, . . . . .		29	
	—————		
		88 67	
	—————		
		5,299 45	
<b>General expense:—</b>			
<b>Engineering:—</b>			
Pay rolls, . . . . .		\$637 26	
Expenses, . . . . .		569 70	
	—————		
		\$1,206 96	
<b>Landscape Architects, expenses, . . . . .</b>			
		1 50	
Legal, . . . . .		2,144 92	
Claims, . . . . .		2,071 16	
Reports of hearings, . . . . .		51 75	
	—————		
		5,476 29	
	—————		
		\$226,372 59	
Amount charged to Dec. 1, 1905, . . . . .		4,260,745 88	
Winthrop Parkway expenditures for 1904 and 1905, transferred from Metropolitan Parks Loan, . . . . .		15,977 30	
	—————		
		4,503,095 77	
<b>Balance in hands of State Treasurer, . . . . .</b>			
		\$311,811 64	
	—————		

## METROPOLITAN PARKS SYSTEM MAINTENANCE.

Appropriation for 1906, . . . . .	\$299,139 00
-----------------------------------	--------------

*Expenditures.*

## General expense:—

## Police:—

Pay rolls, . . . . .	\$47,789 21
Equipment, . . . . .	4,209 96
	—————
	\$51,999 17
Salaries, . . . . .	9,957 60
Rent, . . . . .	3,269 35
Annual report, . . . . .	1,169 57
Telephones, . . . . .	480 53
Postage, etc., . . . . .	327 83
Stationery and printing, . . . . .	324 90
Travelling, . . . . .	317 15
Maps and books, . . . . .	287 31
Extra clerical assistance, . . . . .	251 60
Safe, . . . . .	150 00
Advertising rules, . . . . .	107 84
Typewriter, . . . . .	87 75
Towel supply, . . . . .	40 05
Desk, . . . . .	37 80
Ice, . . . . .	23 00
Typewriter ribbons, . . . . .	22 50
Rent of typewriters, . . . . .	15 50
Envelope sealer, . . . . .	15 00
Rubber stamps, . . . . .	10 45
Spring water, . . . . .	8 75
Copy bath and cloths, . . . . .	8 50
Photographs and slides, . . . . .	7 25
Typewriter repairs, . . . . .	5 28
Desk lamp, . . . . .	3 00
Miscellaneous, . . . . .	2 40
	—————
	\$68,930 08

## Blue Hills Reservation:—

Labor, . . . . .	\$17,003 70
Teaming, . . . . .	1,750 02
Keep of horses, . . . . .	3,626 28
	—————
	\$22,380 00
Labor and supplies, gypsy moth work, . . . . .	11,053 94
General supplies, . . . . .	1,944 65
Telephones, . . . . .	389 37
Water rates, . . . . .	267 27
Lighting offices, . . . . .	156 69
Stationery, . . . . .	54 63
Express, . . . . .	51 90
Laundry, . . . . .	35 09
Repairs, . . . . .	28 65
Travelling, . . . . .	2 95
Miscellaneous, . . . . .	11 40
	—————

36,376 54

## Middlesex Fells Reservation:—

Labor and supplies, gypsy and brown-tail moth work, . . . . .	\$96,707 02
Labor, . . . . .	\$10,411 51
Teaming, . . . . .	2,508 76
Keep of horses, . . . . .	2,046 86
	—————

14,967 13

Amounts carried forward, . . . . .	\$111,674 15	\$105,306 62	\$299,139 00
------------------------------------	--------------	--------------	--------------

<i>Amounts brought forward,</i>	111,674 15	105,306 62	299,139 00
Lighting, . . . . .	509 54		
General supplies, . . . . .	1,708 48		
Landscape Architects, . . . . .	660 84		
Telephones, . . . . .	192 98		
Express, . . . . .	155 00		
Repairs, . . . . .	146 36		
Stationery and printing, . . . . .	118 71		
Plates for crusher, . . . . .	108 52		
Lighting offices, . . . . .	100 03		
Travelling, . . . . .	94 51		
Water rates, . . . . .	31 37		
Boiler inspection, . . . . .	5 00		
Miscellaneous, . . . . .	1 75		
		115,502 24	
<i>Revere Beach Reservation:—</i>			
Labor, . . . . .	\$8,110 23		
Keep of horses, . . . . .	557 99		
		\$8,668 22	
Watering, . . . . .	1,644 86		
Lighting, . . . . .	4,373 57		
General supplies, . . . . .	840 26		
Telephones, . . . . .	410 11		
Lighting offices, . . . . .	77 04		
Travelling, . . . . .	73 10		
Labor, gypsy moth work, . . . . .	69 50		
Stationery and printing, . . . . .	65 07		
Painting, . . . . .	50 00		
Water rates, . . . . .	43 00		
Chairs, . . . . .	32 25		
Express, . . . . .	26 92		
Repairs, . . . . .	16 43		
Awning, . . . . .	14 00		
Miscellaneous, . . . . .	4 95		
		16,409 28	
<i>Stony Brook Reservation:—</i>			
Labor, . . . . .	\$2,796 75		
Teaming, . . . . .	15 00		
Keep of horses, . . . . .	326 77		
		\$3,138 52	
Labor and supplies, gypsy moth work, . . . . .	802 05		
General supplies, . . . . .	637 52		
Telephones, . . . . .	49 62		
Stationery and printing, . . . . .	16 05		
Water rates, . . . . .	13 00		
Miscellaneous, . . . . .	1 15		
		4,657 91	
<i>Beaver Brook Reservation:—</i>			
Labor, . . . . .	\$937 65		
Teaming, . . . . .	5 25		
Keep of horses, . . . . .	259 12		
		\$1,202 02	
Labor and supplies, gypsy moth work, . . . . .	890 72		
General supplies, . . . . .	142 61		
Telephones, . . . . .	43 07		
Repairs, . . . . .	39 14		
Water rates, . . . . .	26 90		
Stationery and printing, . . . . .	6 29		
Travelling, . . . . .	5 85		
Express, . . . . .	3 25		
Miscellaneous, . . . . .	4 50		
		2,364 35	
<i>Amounts carried forward,</i>		\$244,240 40	\$299,139 00

*Amounts brought forward, . . . . .* . . . . . \$244,240 40 \$299,139 00

Charles River Reservation :—

Riverside Section :—

Labor, . . . . .	\$3,627 57
Teaming, . . . . .	247 50
Keep of horses, . . . . .	11 75
	—————
Labor and supplies, gypsy moth work, . . . . .	1,998 66
General supplies, . . . . .	1,078 16
Lighting office, . . . . .	184 13
Telephones, . . . . .	140 10
Travelling, . . . . .	128 87
Ice planer, . . . . .	76 50
Stationery and printing, . . . . .	59 89
Water rates, . . . . .	32 80
Express, . . . . .	15 00
Repairs, . . . . .	6 25
	—————
	7,607 18

Charles River Reservation :—

Speedway Section :—

Labor, . . . . .	\$7,819 65
Teaming, . . . . .	1,257 91
Keep of horses, . . . . .	1,486 42
	—————
Watering, . . . . .	2,899 81
Lighting, . . . . .	2,077 14
General supplies, . . . . .	2,433 55
Labor and supplies, gypsy moth work, . . . . .	1,021 59
Booths, . . . . .	287 00
Telephones, . . . . .	110 97
Repairs, . . . . .	98 56
Lighting office, . . . . .	77 31
Stationery and printing, . . . . .	44 75
Laundry, . . . . .	38 27
Water rates, . . . . .	23 80
Travelling, . . . . .	13 55
Physician, . . . . .	6 00
Express, . . . . .	4 45
	—————
	19,700 73

Neponset River Reservation :—

Labor, . . . . .	\$653 64
Teaming, . . . . .	95 00
	—————
Water pipe, . . . . .	146 00
Labor, gypsy moth work, . . . . .	66 25
Telephones, . . . . .	33 80
General supplies, . . . . .	13 07
	—————
	1,007 76

Mystic River Reservation :—

Labor, gypsy moth work, . . . . .	\$270 31
Telephones, . . . . .	38 35
	—————
	308 66

Lynn Shore Reservation :—

Labor, . . . . .	\$1,281 50
Teaming, . . . . .	15 75
	—————
Watering, . . . . .	723 43
Lighting, . . . . .	1,039 50
General supplies, . . . . .	210 27
Travelling, . . . . .	15 32
Stationery and printing, . . . . .	2 49
	—————
	3,288 26

*Amounts carried forward, . . . . .* . . . . . \$276,152 99 \$299,139 00

*Amounts brought forward, . . . . .* \$276,152 99 \$299,139 00

Quincy Shore Reservation:—

Cloth posters, . . . . .	\$10 10
	—
	10 10

Winthrop Shore Reservation:—

Labor, . . . . .	\$1,655 63
Teaming, . . . . .	15 75
Keep of horses, . . . . .	95 63
	—
Watering, . . . . .	\$1,767 01
Lighting, . . . . .	751 53
Street sweeper, . . . . .	555 62
General supplies, . . . . .	250 00
Telephones, . . . . .	213 00
Water rates, . . . . .	67 80
Water rates, . . . . .	9 00
Travelling, . . . . .	4 30
	—
	3,618 26

Band concerts:—

Revere Beach Reservation:—

Band, . . . . .	\$6,580 00
Engineering, . . . . .	13 25
Band stand, . . . . .	\$440 00
Awnings, . . . . .	147 00
Shingling, . . . . .	122 00
Ceilings, . . . . .	55 00
Architects, . . . . .	32 10
Sliding curtains, . . . . .	67 15
	—
	863 25
Lighting, . . . . .	59 85
Contribution to cost of quarters, . . . . .	25 00
Express, . . . . .	5 90
	—
	\$7,547 25

Charles River, Riverside:—

Band, . . . . .	100 00
-----------------	--------

Nahant Beach Parkway:—

Band, . . . . .	\$1,231 00
Engineering, . . . . .	6 00
Band stand, . . . . .	\$440 00
Awnings, . . . . .	147 00
Shingling, . . . . .	122 00
Ceilings, . . . . .	55 00
Architects, . . . . .	32 10
	—
Lighting, . . . . .	796 10
	64 55
	—
	2,097 65

Nantasket Beach Reservation:—

Band, . . . . .	\$5,184 00
Cardboard, . . . . .	4 50
	—
	5,188 50
	—
	14,933 40
	—
	294,714 75
Balance, . . . . .	—
	\$4,424 25

## METROPOLITAN PARKS BOULEVARD MAINTENANCE.

Appropriation, Jan. 1 to Dec. 1, 1906, . . . . . \$105,128 00

*Expenditures.*

## General expense:—

## Police:—

Pay rolls,	18,620 98
Equipment,	3,347 06
	—————
	\$21,968 04
Salaries,	8,362 44
Rent,	2,461 20
Telephones,	817 74
Stationery and printing,	431 42
Travelling,	316 67
Maps and books,	196 93
Extra clerical assistance,	190 00
Filing cabinets, cards, etc.,	187 24
Postage, etc.,	136 40
Office repairs,	94 01
Awnings,	83 20
Desk,	77 00
Account books,	62 75
Recording petition, Apportionment Commission,	60 00
Typewriter,	50 00
Towel supply,	39 30
Photographs and slides,	27 90
Office supplies,	22 46
Typewriter repairs,	20 31
Rugs,	18 45
Wardrobe,	18 00
Enamel plates,	17 50
Rent of typewriter,	16 50
Spring water,	16 25
Plan rolls,	15 80
Table,	15 00
Rubber stamps,	13 75
Ventilators,	13 50
Advertising, Apportionment Commission,	12 93
Wiring for desk bell,	9 22
Moving,	7 50
Binding records,	6 00
Door check,	5 00
Cuspidors,	5 00
Lettering books,	4 50
Frame,	1 00
	—————
	\$35,800 91

## Blue Hills Parkway:—

Labor,	2,437 25
Teaming,	136 50
Keep of horses,	16 80
	—————
	\$2,590 55
Watering,	2,590 33
Lighting,	2,306 37
General supplies,	626 95
Labor, gypsy moth work,	94 50
Telephones,	53 93
Stationery and printing,	13 92
Miscellaneous,	8 25
	—————
	8,284 80

Amounts carried forward, . . . . . \$44,085 71 \$105,128 00

*Amounts brought forward, . . . . .* \$44,085 71 \$105,128 00

Middlesex Fells Parkway:—

Labor, . . . . .	\$5,719 36
Teaming, . . . . .	2,037 70
Keep of horses, . . . . .	293 44
	—————
Watering, . . . . .	1,929 16
Lighting, . . . . .	5,453 80
Labor and supplies, gypsy moth work, . . . . .	994 13
General supplies, . . . . .	853 03
Telephones, . . . . .	85 62
Water rates, . . . . .	14 00
Lighting office, . . . . .	10 20
Stationery and printing, . . . . .	8 82
Damages, defect in parkway, . . . . .	7 00
Miscellaneous, . . . . .	21 05
	—————
	17,427 31

Mystic Valley Parkway:—

Labor, . . . . .	\$2,885 95
Teaming, . . . . .	624 75
Keep of horses, . . . . .	161 97
	—————
Watering, . . . . .	1,035 63
Lighting, . . . . .	2,414 83
Labor and supplies, gypsy moth work, . . . . .	1,902 69
General supplies, . . . . .	327 72
Telephones, . . . . .	63 75
Stationery and printing, . . . . .	6 00
Miscellaneous, . . . . .	26 38
	—————
	9,449 67

Revere Beach Parkway:—

Labor, . . . . .	\$5,325 05
Teaming, . . . . .	128 19
Keep of horses, . . . . .	624 05
	—————
Watering, . . . . .	5,495 22
Lighting, . . . . .	5,041 63
General supplies, . . . . .	1,549 30
Sled, . . . . .	90 00
Harness, . . . . .	40 00
Stationery and printing, . . . . .	18 17
Water rates, . . . . .	5 00
Express, . . . . .	80
Miscellaneous, . . . . .	6 05
	—————
	18,323 46

Neponset River Parkway:—

Labor, . . . . .	\$577 75
Teaming, . . . . .	5 00
	—————
Lighting, . . . . .	582 75
Watering, . . . . .	407 00
General supplies, . . . . .	290 00
Stationery and printing, . . . . .	220 38
	—————
	4 21
	1,504 34

Nahant Beach Parkway:—

Labor, . . . . .	\$1,661 32
Teaming, . . . . .	35 00
Keep of horses, . . . . .	177 73
	—————
Watering, . . . . .	1,874 05
Lighting, . . . . .	969 54
General supplies, . . . . .	769 70
Park settees, . . . . .	287 23
	—————
	125 00

*Amounts carried forward, . . . . .* \$4,025 52 \$90,790 49 \$105,128 00

## NANTASKET BEACH MAINTENANCE.

Appropriation, Jan. 1 to Dec. 1, 1906, . . . . . \$21,300 00

### *Expenditures.*

Labor, . . . . .	\$3,750 68
Teaming, . . . . .	10 00
Keep of horses, . . . . .	154 97
	—————
	\$3,915 65
Police :—	
Pay rolls, . . . . .	\$9,476 87
Equipment, . . . . .	706 65
	—————
	10,183 52
Nantasket Avenue repairs, . . . . .	1,499 61
Watering, . . . . .	1,450 88
Lighting, . . . . .	1,455 37
General supplies, . . . . .	1,162 36
Repairs, . . . . .	487 18
Rent, superintendent's house, . . . . .	366 63
Water rates, . . . . .	303 00
Telephones, . . . . .	104 85
Stationery and printing, . . . . .	14 55
Express, . . . . .	13 62
Miscellaneous, . . . . .	33 14
	—————
	20,990 36
— Balance, . . . . .	\$309 64

## WELLINGTON BRIDGE MAINTENANCE.

Appropriation, Jan. 1 to Dec. 1, 1906, . . . . .	\$3,325 00
--	------------

*Expenditures.*

Labor, . . . . .	\$1,889 19
Teaming, . . . . .	7 50
	—————
Lighting, . . . . .	\$14 00
Power, . . . . .	250 00
General supplies, . . . . .	114 79
Repairing draw, . . . . .	97 80
Telephones, . . . . .	60 39
Water rates, . . . . .	55 44
Stationery and printing, . . . . .	6 29
	—————
Balance, . . . . .	3,295 40
	—————
	\$29 60

## METROPOLITAN PARKS EXPENSE FUND.

Balance Jan. 1, 1906, . . . . .	\$64,687 45
Receipts, Jan. 1 to Dec. 1, 1906, eleven months, . . . . .	77,829 86
	—————
	\$142,517 31

*Expenditures.*

General expense:—	
100 copies American Park Systems, . . . . .	\$50 00
1000 copies legislation Metropolitan Parks, . . . . .	175 73
	—————
	\$225 73
Police expense fund:—	
Pay rolls, . . . . .	\$1,354 50
Emergency cases, . . . . .	108 00
Rent of armory, . . . . .	100 00
Care of armory, . . . . .	25 00
	—————
	1,587 50
Blue Hills Reservation:—	
Seedlings, . . . . .	\$153 12
Fox hound, . . . . .	35 00
Water rates, . . . . .	29 13
Cleaning vaults, . . . . .	11 00
	—————
	228 25
Middlesex Fells Reservation:—	
Crusher expense, . . . . .	\$1,886 39
Landscape Architects:—	
Services, . . . . .	\$491 40
Expenses, . . . . .	79 75
	—————
	571 15
Bear Hill Entrance, . . . . .	268 00
Teaming logs, . . . . .	261 00
Sawing wood, . . . . .	226 11
Animals, . . . . .	191 50
Motor cycle, . . . . .	191 50
Repairing buildings, . . . . .	173 06
Land dressing, . . . . .	75 00
Water rates, . . . . .	21 00
Screens, . . . . .	9 60
Telephones, . . . . .	8 40
Cleaning cesspool, . . . . .	6 00
	—————
	3,888 71
Amounts carried forward, . . . . .	\$5,930 14
	—————
	\$142,517 31

<i>Amounts brought forward,</i>	.. . . . .	\$5,930 14	\$142,517 31
---------------------------------	------------	------------	--------------

## Revere Beach Reservation:—

## Bath-house:—

Pay rolls,	.. . . . .	\$16,852 53
Emergency room extension,	.. . . . .	3,461 42
Bathing suits, .	.. . . . .	2,599 88
Lighting, .	.. . . . .	1,467 70
Coal, .	.. . . . .	781 54
Engine room supplies, .	.. . . . .	644 62
Paint, .	.. . . . .	630 63
Supplies, .	.. . . . .	542 86
Lumber, .	.. . . . .	437 20
Towels, .	.. . . . .	400 15
Stationery, .	.. . . . .	335 01
Medicines and attendance, .	.. . . . .	289 68
Stockings, .	.. . . . .	275 00
Soap, .	.. . . . .	248 98
Tickets, .	.. . . . .	136 50
Repairs, .	.. . . . .	125 18
Hardware, .	.. . . . .	121 35
Disinfectant, .	.. . . . .	112 15
Water rates, .	.. . . . .	103 17
Telephones, .	.. . . . .	57 42
Findings, .	.. . . . .	46 07
Ice, .	.. . . . .	565 50
Corrugated matting,	.. . . . .	90 00
Hose, .	.. . . . .	48 25
New lavatory, .	.. . . . .	44 00
Caps, .	.. . . . .	75 00
Beds, .	.. . . . .	148 55
Tables, .	.. . . . .	36 00
Partitions, clothing room, .	.. . . . .	63 00
Doors, windows, etc., .	.. . . . .	30 44
Brass checks, .	.. . . . .	37 50
Key bands, .	.. . . . .	24 33
Flags, .	.. . . . .	22 85
Laying pipe, .	.. . . . .	20 00
Coffee urn, .	.. . . . .	12 00
Drinking cups, .	.. . . . .	10 00
Brooms, .	.. . . . .	22 38
Oil tank, .	.. . . . .	5 00
Cooling tank, .	.. . . . .	10 00
Combs, .	.. . . . .	6 20
Brushes, .	.. . . . .	1 13
Key blanks, .	.. . . . .	3 65
Silver rings, .	.. . . . .	5 00
Blackboard, .	.. . . . .	2 92
Electric stove, .	.. . . . .	6 00
Lamp, .	.. . . . .	3 00
Suit case, .	.. . . . .	4 40
Spring water, .	.. . . . .	8 00
Miscellaneous, .	.. . . . .	38 59

.. . . . .	\$31,012 73
------------	-------------

## Engineering:—

Pay rolls,	.. . . . .	\$34 45
Expenses, .	.. . . . .	10 90

.. . . . .	45 35
------------	-------

Granolithic walks, Beaver and Bath streets, .	630 03
---	--------

Beaver Street construction, .	330 36
-------------------------------	--------

Sidewalk repairs, .	98 24
---------------------	-------

Motor cycles, .	237 63
-----------------	--------

Hay, .	4 83
--------	------

.. . . . .	4 83
------------	------

.. . . . .	32,359 17
------------	-----------

<i>Amounts carried forward,</i>	.. . . . .	\$38,289 36	\$142,517 31
---------------------------------	------------	-------------	--------------

*Amounts brought forward, . . . . .* \$38,289 36 \$142,517 31

**Stony Brook Reservation:—**

Water rates, . . . . .	\$35 00
Cleaning vault, . . . . .	8 00
Repairs, . . . . .	3 10
	46 10

**Beaver Brook Reservation:—**

Moth work, . . . . .	\$703 07
Horse, . . . . .	250 00
	953 07

**Hemlock Gorge Reservation:—**

Fence, . . . . .	\$16 55
Water rates, . . . . .	13 80
	30 35

**Charles River Reservation:—**

**Riverside Section:—**

Forest Grove, repairs and grading, . . . . .	\$786 99
Seaverns house repairs, . . . . .	496 57
Rent, superintendent's house, . . . . .	360 00
Floats, . . . . .	250 90
Bridge, . . . . .	250 00
Headquarters repairs, . . . . .	154 60
Forestry, . . . . .	148 55
Bath-house, . . . . .	65 00
Riverside path, . . . . .	64 00
Lights, Weston Bridge, . . . . .	40 00
Screens, . . . . .	27 55
Repairs, . . . . .	23 88
Oars and supplies, emergency boats, . . . . .	17 53
Water rates, . . . . .	16 43
Express, emergency boats, . . . . .	12 00
Lighting office, . . . . .	11 25
Danger signs, . . . . .	6 49
Miscellaneous, . . . . .	23 45
	2,755 19

**Speedway Section:—**

Horses, . . . . .	\$735 00
Drain, . . . . .	39 25
Storm windows, . . . . .	35 00
	809 25

**Neponset River Reservation:—**

Tool house and sub-station, . . . . .	\$233 69
	233 69

**Mystic River Reservation:—**

Moth work, . . . . .	\$148 75
Repairs, Wait house, . . . . .	109 82
Water rates, . . . . .	21 00
	279 57

**Lynn Shore Reservation:—**

Engineering:—	
Pay rolls, . . . . .	\$181 20
Expenses, . . . . .	1 80
	\$183 00
Riprap, . . . . .	1,239 31
Horse, . . . . .	300 00
Motor cycles, . . . . .	233 03
Watering cart, . . . . .	220 00
Planting, . . . . .	41 25
Police boxes, . . . . .	8 00
Advertising sale of buildings, . . . . .	3 50
	2,228 09

*Amounts carried forward, . . . . .* \$45,624 67 \$142,517 31

<i>Amounts brought forward,</i>	.. . . . .	\$45,624 67	\$142,517 31
<b>Blue Hills Parkway:—</b>			
Police signal service,	.. . . . .	\$1,497 33	
Motor cycles,	.. . . . .	251 45	
Tool house and sub-station,	.. . . . .	85 00	
Duck suit,	.. . . . .	2 00	
			1,835 83
<b>Mystic Valley Parkway:—</b>			
Motor cycle,	.. . . . .	\$236 78	
Water rates,	.. . . . .	22 00	
			258 78
<b>Revere Beach Parkway:—</b>			
Macadam surfacing,	.. . . . .	\$2,899 82	
Motor cycles,	.. . . . .	218 03	
Dump cart,	.. . . . .	175 00	
Repairs to sidewalks,	.. . . . .	98 75	
Replanting trees,	.. . . . .	44 50	
			3,436 10
<b>Neponset River Parkway:—</b>			
Fence,	.. . . . .	\$190 40	
Planting trees,	.. . . . .	55 50	
Dam, Hemenway Pond,	.. . . . .	34 00	
Water rates,	.. . . . .	6 00	
			285 90
<b>Nahant Beach Parkway:—</b>			
<b>Bath-house:—</b>			
Pay rolls,	.. . . . .	\$4,402 15	
Bathing suits,	.. . . . .	1,318 75	
Laundry work,	.. . . . .	745 49	
Paint,	.. . . . .	315 49	
Water rates,	.. . . . .	172 44	
Coal,	.. . . . .	161 00	
Lighting,	.. . . . .	110 30	
Lumber,	.. . . . .	82 32	
Telephones,	.. . . . .	70 66	
Supplies,	.. . . . .	59 18	
Stockings,	.. . . . .	55 00	
Engine room supplies,	.. . . . .	48 59	
Gasolene,	.. . . . .	36 52	
Ice,	.. . . . .	26 37	
Chairs,	.. . . . .	23 98	
Tickets,	.. . . . .	17 15	
Stationery,	.. . . . .	13 25	
Medicines and attendance,	.. . . . .	13 02	
Uniforms,	.. . . . .	9 81	
Tables,	.. . . . .	9 05	
Brooms,	.. . . . .	6 70	
Findings,	.. . . . .	6 09	
Combs and brushes,	.. . . . .	4 71	
Repairs,	.. . . . .	4 60	
			\$7,712 62
Planting,	.. . . . .	500 00	
Drain outlet,	.. . . . .	10 00	
Police boxes,	.. . . . .	2 00	
			8,224 62
<b>Fresh Pond Parkway:—</b>			
Lowell Memorial Park, construction,	.. . . . .	\$1,169 18	
			1,169 18
<b>Furnace Brook Parkway:—</b>			
Horse,	.. . . . .	\$350 00	
Miscellaneous,	.. . . . .	5 00	
			355 00
<b>Lynn Fells Parkway:—</b>			
Advertising sale of buildings,	.. . . . .	\$20 00	
			20 00
<i>Amounts carried forward,</i>	.. . . . .	\$61,210 08	\$142,517 31

Amounts brought forward, . . . . . \$61,210 08 \$142,517 31

Nantasket Beach Reservation:—

Bath-house:—

Pay rolls, . . . . .	\$4,791 40
Bathing suits, . . . . .	1,440 50
Coal, . . . . .	1,296 00
Water rates, . . . . .	449 41
Towels, . . . . .	144 00
Paint, . . . . .	92 21
Ice, . . . . .	85 88
Lighting, . . . . .	77 57
Stationery, . . . . .	70 19
Engine room supplies, . . . . .	62 99
Fire extinguishers, . . . . .	62 00
Duck and blankets, . . . . .	51 01
Stockings, . . . . .	41 25
Report, Densmore & LeClear, . . . . .	35 00
Medicines and attendance, . . . . .	36 62
Telephones, . . . . .	27 00
Soap, etc., . . . . .	24 58
Caps, . . . . .	24 00
Findings, . . . . .	23 67
Supplies, . . . . .	21 40
Hose, . . . . .	25 77
Express, . . . . .	13 00
Baskets, . . . . .	12 00
Brooms, . . . . .	7 25
Uniforms, . . . . .	7 00
Brushes and combs, . . . . .	6 50
Repairs, . . . . .	6 35
Tickets, . . . . .	6 25
Laundering coats, . . . . .	5 10
Bathing checks, . . . . .	3 85
Floor brushes, . . . . .	3 15
Hardware, . . . . .	3 00
Pails, . . . . .	1 30
Scissors, . . . . .	1 00
Miscellaneous, . . . . .	15 50
	—————
	\$8,973 70

Engineering:—

Pay rolls, . . . . .	\$90 39
Expenses, . . . . .	2 00
	—————
	92 39

Landscape Architects:—

Services, . . . . .	\$212 24
Expenses, . . . . .	6 57
	—————
	218 81
Repairs to buildings, . . . . .	813 06
Gravel, . . . . .	512 75
Painting hotel and café, . . . . .	508 00
Lights, café, . . . . .	55 00
Drinking fountain, . . . . .	46 11
Pipe privilege, . . . . .	5 00
Express, . . . . .	2 00
	—————
	11,226 82

72,436 90

—————

\$70,080 41

METROPOLITAN PARKS TRUST FUND.

Balance Jan. 1, 1906, . . . . .	\$89 74
Receipts, Jan. 1 to Dec. 1, 1906, . . . . .	889 00
	—————
	\$978 74

---

---

## APPENDIX.

---

---





THIS BRIDGE WAS ERECTED IN MEMORY OF

# CHARLES ELIOT

LANDSCAPE ARCHITECT.

TO THE METROPOLITAN PARK COMMISSION.

BY AMPLER KNOWLEDGE INTELLIGENT REPERE ESTATE AND  
ELOQUE IT TEACHING HE CREATED AND DIFFUSED OPINION WHICH IS  
CADDABLE OF ACCOMPLISHING HIS GREAT PURPOSE = THE  
PRESERVATION OF OUR HISTORICAL AND BEAUTIFUL HERITAGE.



## EXERCISES AT THE DEDICATION OF THE CHARLES ELIOT MEMORIAL BRIDGE ON GREAT BLUE HILL ON OCT. 13, 1906.

---

On the afternoon of Oct. 13, 1906, the Charles Eliot Memorial on Great Blue Hill was dedicated by simple exercises held near the summit of the hill on a little plateau a few steps away from the Memorial Bridge. There were present, in addition to the Committee of the Charles Eliot Memorial Association and the Metropolitan Park Commission, members of Eliot's family, classmates, associates, friends, and a considerable number of people brought there by the interest of the occasion. The exercises were begun by Charles S. Rackemann, Esq., Chairman of the Memorial Committee, who spoke as follows: —

### ADDRESS OF CHARLES S. RACKEMANN, ESQ.

We have come together at this place, this vantage point of eastern Massachusetts, in all the glory of a beautiful autumn day, animated by the single idea of establishing a permanent expression of the respect and honor which we feel for the character and achievements of one who has gone out from among us never to return, — Charles Eliot, landscape architect.

In a large sense Eliot was the founder of the Metropolitan Park System of Massachusetts, as he certainly was of the Trustees of Public Reservations, — the one now an integral part of the domain of our beloved Commonwealth, the other a quasi-public corporation, having similar purposes and similar duties.

Eliot was a man of genius, with breadth of view and far-seeing wisdom. He was a humanist. And it is highly creditable to this community, in which most of his life work was done, that it recognized so quickly and so fully the incalculable benefit to the present and all future generations that was to result from the accomplishment of his conceptions and plans.

“ Ideas,” says Emerson, “ beget enthusiasm; ” and so it was that within a few weeks from the time of Eliot’s death a movement

was set on foot by some of his friends for making a permanent public record of the respect, admiration and esteem which were felt for him and his work by his fellow citizens.

A committee was quickly formed, which took charge of this labor of love. It consisted of one of the original members of the standing committee of the Trustees of Public Reservations, two members of the Appalachian Mountain Club, one classmate in Harvard College and one neighbor in Milton.

The announcement of its plan was enough to bring to it a generous total of many contributions, ranging from the modest one dollar sent by some anonymous friend to the check for a hundredfold that amount received from some richer but not more willing subscriber.

After much careful study, and with the co-operation of the Metropolitan Park Commission, at all times cordially given, this site was selected for the memorial, as the most appropriate in the whole district; an advisory architect, Mr. A. W. Longfellow, was engaged, and later a sculptor, to design the recording tablet.

The whole memorial which we dedicate to-day consists of two parts: it includes the path (hereafter to be known as the "Charles Eliot Path") encircling the brow of Blue Hill, and the stone bridge over this little ravine.

The bridge was designed by the present landscape architects to the Commission, who were his former associates in business, Olmsted Brothers, and the tablet by Mr. C. R. Harley.

The path provided by the Metropolitan Park Commission is the tribute of the Commonwealth; the bridge with the inscription is that of the public.

The work of the committee is done. If it shall be found worthy of your approval, and the approval of all friends and admirers of Charles Eliot, nothing more is to be desired.

To Hon. Mr. de las Casas, Chairman of the Board of Metropolitan Park Commissioners, in whose custody this reservation has been placed by the Commonwealth for the use and enjoyment of its inhabitants forever, I deliver the deed of gift.

The gift was accepted by Hon. William B. de las Casas, Chairman of the Metropolitan Park Commission, in the following words:—

#### ADDRESS OF HON. WILLIAM B. DE LAS CASAS.

In behalf of the Metropolitan Park Commission, as representing the Commonwealth and its Metropolitan Parks District, I accept the gift of the Charles Eliot Memorial upon the Great Blue Hill, and thereby dedicate it to public use. In the same

representative capacity I return to you and your committee, and to the subscribers and all who by gifts of money, time and talents have contributed to this memorial, the thanks of the Commission, the Commonwealth and all citizens, both for the addition which has been made to the attractiveness and resources of the Blue Hills Reservation, and even more for the evidence which it perpetuates of the larger gift made by Charles Eliot of his talents, work and life.

Charles Eliot was a patient, practical, working idealist; a noble son of a noble father; a worthy citizen of this Commonwealth. He was gentle, sweet-natured, sensitive and affectionate, yet well trained, discreet, patient, industrious and persistent beyond most men. He brought these fine qualities into his intense professional life and into his citizenship. While he did not wholly originate or develop the idea of a Metropolitan District and system of parks, nor live to work out all its details, yet he saw its form more clearly than others, and shaped its accomplishment with such intelligence and sweet reasonableness that all men became persuaded to make it possible, and to work out its details with something of his devotion and intelligence.

The result is before us in the Metropolitan Park System, now well advanced toward completion, and more immediately before us in this Great Blue Hills Reservation of 4,700 acres, — stretching eastward from this seat upon its highest hilltop almost as far as eye can see. It is fitting that this simple, rugged memorial should be placed in this spot. Charles Eliot loved the woods and rocky hills; he knew their bounds and inmost recesses, and the refreshment which they held for the tired souls of those who must live for the most part in the noisy ugliness of towns. The intensity of his nature went quietly and persistently into an effort to make sure that these reservations and their tree growth would be cared for, and become useful and available to the highest degree. It was in this Blue Hills Reservation that in March, 1897, while persistently accumulating data to make evident the necessity for adequate forestry and development plans, he took the cold that developed into intense illness, and terminated his life.

We may hope that as men come here from time to time and look over the fair prospect they will gain in hope and faith, and, going away, become each in his own work a patient, practical idealist like Charles Eliot.

At the conclusion of the Chairman's address Mr. Rackemann read the following letter from His Excellency Governor Guild: —

## LETTER OF HIS EXCELLENCY THE GOVERNOR.

I am extremely sorry that the unavoidable stress of duties at this time makes it impossible for me to attend the dedication of the Eliot Memorial at the top of Great Blue Hill. He was my friend, as he was yours, and all who knew him loved him. I cannot conceive a more fitting location for his monument than on the great hill from which the Commonwealth takes its name. He taught the love of open air and of those gentle arts which are the hand-maidens of nature herself. We are all the better for his friendship, and life is healthier and more wholesome because he lived. The memorial well reminds the people of his life, but his monuments are the great breathing spaces about ocean, stream and woodland, which the Commonwealth preserves forever for the use of its people.

The exercises were concluded with the following address of Henry W. Cunningham, Esq., secretary of the class of 1882 of Harvard College, of which Charles Eliot was a member:—

## ADDRESS OF HENRY W. CUNNINGHAM, Esq.

I am glad to say a few words of tribute on behalf of the class of '82 to the memory of Charles Eliot, for he was one of that band of brothers who graduated from Harvard just twenty-five years ago. And you all of you know how close are the ties that bind together the members of a class by that sympathetic cord that grows tighter as the years go on, and as the ranks grow thinner. As the two gentlemen who have preceded me have spoken as representing the public, I may be permitted to touch upon the personal side,—the side of friendship and of comradeship. Our class, although it contained many admirable men from eastern Massachusetts, was not what is known as a "Boston class," for most of our leading men during college days came from other parts of the country. They came together as freshmen in many small groups, some of the men knowing few beyond those with whom they had been at school.

But there were a few Massachusetts men whom we all knew by reputation, at least, before we met them, and of these I shall call to your mind to-day but two,—Sherman Hoar and Charles Eliot,—both gone in their early prime. Yet both lived long enough to leave their impress upon this community. There could not have been two men more unlike in character than these two, for Hoar was essentially a public man, while Eliot was so quiet and so retiring that few but his associates realized till towards

the end of his life the full extent of his abilities; yet each of these men had one strong trait in common, — they lived to benefit their fellowmen.

And so we all knew who Charles Eliot was before we met him, and those who came to know him well appreciated the rare charm of his character; but his nature was so retiring that he did not make friends easily. He never took a prominent part in any of the social organizations of the class, or entered into any of the athletic sports, because of his lack of robust health; and, though he never was what was known as a popular man, yet those who knew him always liked him, and I think they liked him not because of the negative virtues of many popular men, but because they recognized, boys though they were, that there lay behind that quiet manner a purpose to do something useful in the world.

I doubt if he had much idea when he was in college just what his life work would be; but instinctively, in taking the elective courses that appealed to him, he took many that were of benefit to him in his profession.

And after we graduated we all knew that he was studying with Mr. Olmsted, and that he was pursuing the profession of landscape architect; but he worked so quietly, so unostentatiously, that none but his intimate friends, and the class secretary, who is supposed to know all things, knew the full extent of his accomplishments.

But suddenly we realized, when these great public reservations began to appear in all their natural beauties, that our classmate had not only done much of the planning, but by his enthusiasm he had led on the interest in them. And so, Mr. Chairman, we are proud to think that he was a member of our class. And we are glad that his name and fame are perpetuated in this enduring monument, though while these grand rocks and noble trees exist he needs no other monument in the hearts of his friends.

And I am glad to say these few words of tribute, and in behalf of my class to lay this wreath of affection upon his monument. And as I stand here upon this hilltop, looking over this broad vista of forest and on to the blue waters of the harbor beyond, I think I may truly say, as did Tennyson, standing on the cliffs below the city of Bristol and lamenting the early death of his friend Hallam: —

And the stately ships go on  
To their haven under the hill;  
But, oh, for the touch of a vanished hand  
And the sound of a voice that is still!







DIAGRAM OF THE PUBLIC OPEN SPACES OF THE BOSTON METROPOLITAN DISTRICT IN 1907.



DIAGRAM OF THE PUBLIC ORG

